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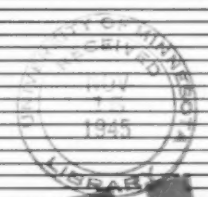

telephony

OVEMBER 10, 1945 • • • VOL. 129, NO. 19

The Journal of the Telephone Industry

Published every week on Saturday by TELEPHONY PUBLISHING CORPORATION, 508 So. Dearborn St., Chicago, Ill. Subscription $5.00 per year. Entered as second class matter at the Post Office at Chicago, Ill., under the act of March 3, 1879.

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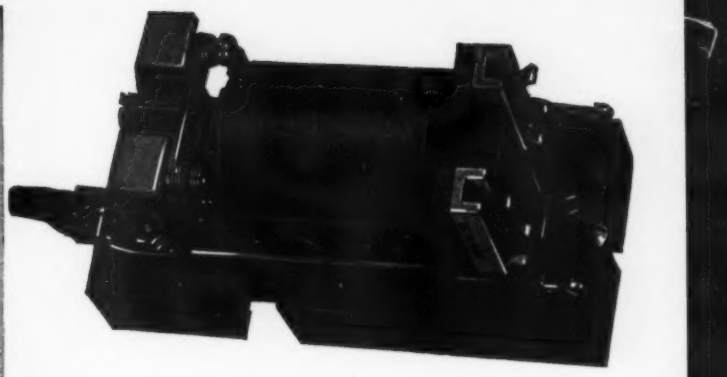

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Published by
TELEPHONY PUBLISHING CORP.
608 S. Dearborn St., CHICAGO (5), ILL.
Telephone Wabash 2435

SUBSCRIPTION—15 Cents a Copy (except special issues); $3 a Year U. S. and Countries in U. S. Spanish Postal Zone; $4 Canada; $5 Other Countries.

NOVEMBER 10, 1945

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ABC of the Telephone

By FRANK E. LEE

PART XV. Switch Line Lamp and Supervisory Circuits. The 14th article in this series appeared in the September 22 issue, page 9.

SEVERAL basic parts of the telephone system have been discussed previously in this series of articles. Obviously, in any switching area, the control unit is the central office switchboard. On manual type switchboards, each station line terminates on a separate jack with either a magnetically controlled drop or a line lamp used to attract the attention of the operator whenever a subscriber wishes to initiate a call.

A brief study of the line circuit termination on the switchboard develops several interesting details which should be considered. First, there is the function of the line lamp, which must be bright enough to attract the attention of the operator, yet consume only a small amount of current. Lamps ordinarily used for this purpose operate on voltages ranging from four to 55 volts. Current consumption for the lower ranges is approximately .170 amp. minimum to .210 amp. maximum. As the voltage increases, current consumption is graduated down to .045 amp. minimum and .055 amp. maximum.

Illuminating engineers have adopted a uniform scale of foot candle power for measuring the brilliance of all electric lamps. The foot candle scale is used for switchboard lamps and the measurement is taken at the tip of the lamp. This is done for the reason that only the light from the tip is utilized on the switchboard. By this scale, switchboard lamps range from 200 to 1,000 end foot candles.

The standard size switchboard lamp is 1-23/32 ins., overall length, and .300 in. in diameter. The base is wedge shaped for use in opening the lamp jack springs, as the lamp is placed in service, and guiding the lamp to the proper position for operation. The electrical connection is completed through two tin plated brass contacts that extend from the base to over half the length of the glass stem. The base of the lamp is offset in such a manner that the jack springs are opened by the wood, fibre or other insulating material in the base, rather than by the contact, itself. In this manner, there is less chance of damaging the thin metal contacts when the lamp is inserted in the socket. The metal contacts cover approximately two-thirds of the completed lamp and form the principal supports for its glass portion (See *Fig.1).*

Switchboard lamps must be able to withstand thousands of operations. In spite of these many operations in normal use, the average life of these lamps, taking into account the few seconds duration of each period of operation, is over 1,500 active hours. This is an exceptionally long life period and probably explains the small amount of trouble caused by line lamp failure.

A second interesting general feature is the opal, or lamp cap, used to cover the lamp jack openings on the face of the switchboard. The most popular color for these opals, for general service, is a frosted white. Through this shade of opal, the light glows softly, without glare, and attracts the attention of the operator. Any glaring effect would result in eye strain to the operator as she must look directly into the light when answering a call.

When several types of subscriber lines terminate on the same panel of the switchboard, the usual practice is to use individual service identification opals for each class of service represented. For example, the plain frosted opal might indicate a two-party residence line; a frosted opal, with a black dot in the center, a measured service business line; a frosted opal, with a black line across the center, a coin service business line; and a black cross on the opal, a prepay public pay-station line, etc. To simplify changing line designations, the lamp cap is built with a slotted bushing made from seamless metal tubing. The bushing, when pressed into the lamp jack, exerts pressure outward in order to retain the cap in place. Special tools are available for removing lamp caps and lamps without damage, and it is always advisable to procure and use these whenever work is to be done on lamps or lamp caps.

The operation of the line and supervisory circuits next will be discussed. Some switchboards are arranged with circuits that operate the line lamp in series with the subscriber transmitter placed across the line. With this circuit, one side of the line is grounded at the switchboard jack, and the other side of the line is connected through the jack to the line lamp and battery supply. When battery on one side of the line is closed through to ground on the other side of the line, the operating path of the line lamp circuit is completed and the operator is signaled. This circuit is operated automatically when the subscriber lifts the receiver preparatory to placing a call (See *Fig. 2).* In the event the line lamp is burned out or removed, the battery would not flow through the station line circuit and the station would be dead.

When answering a subscriber's call, the operator inserts one plug of a cord pair into the line jack. The plug, when in place, establishes a connection with the line jack springs. The jack springs are spread apart, causing the inner jack springs to lose contact with the outer tip and ring springs (See *Fig.*

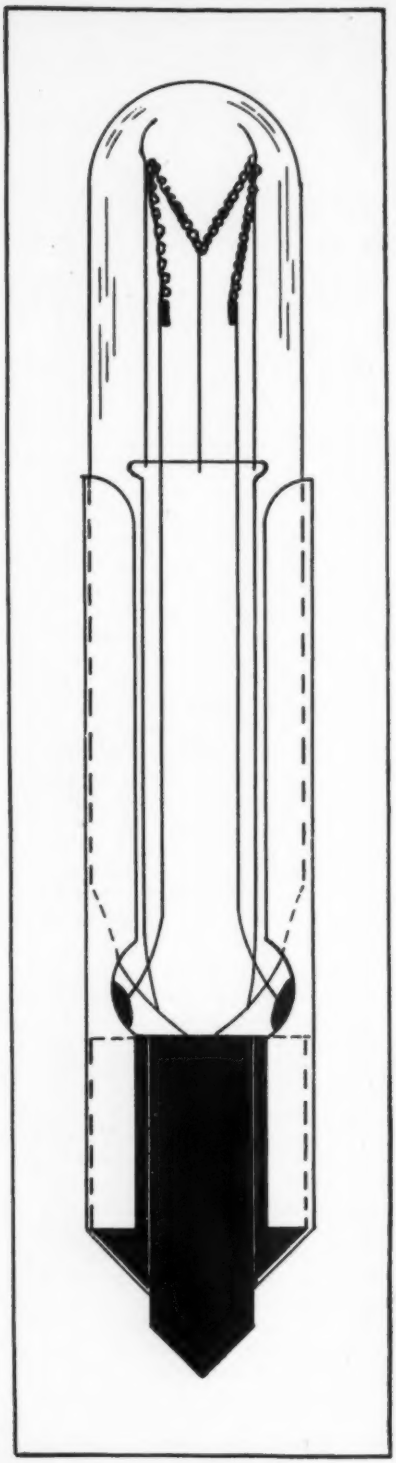


FIG. 1.

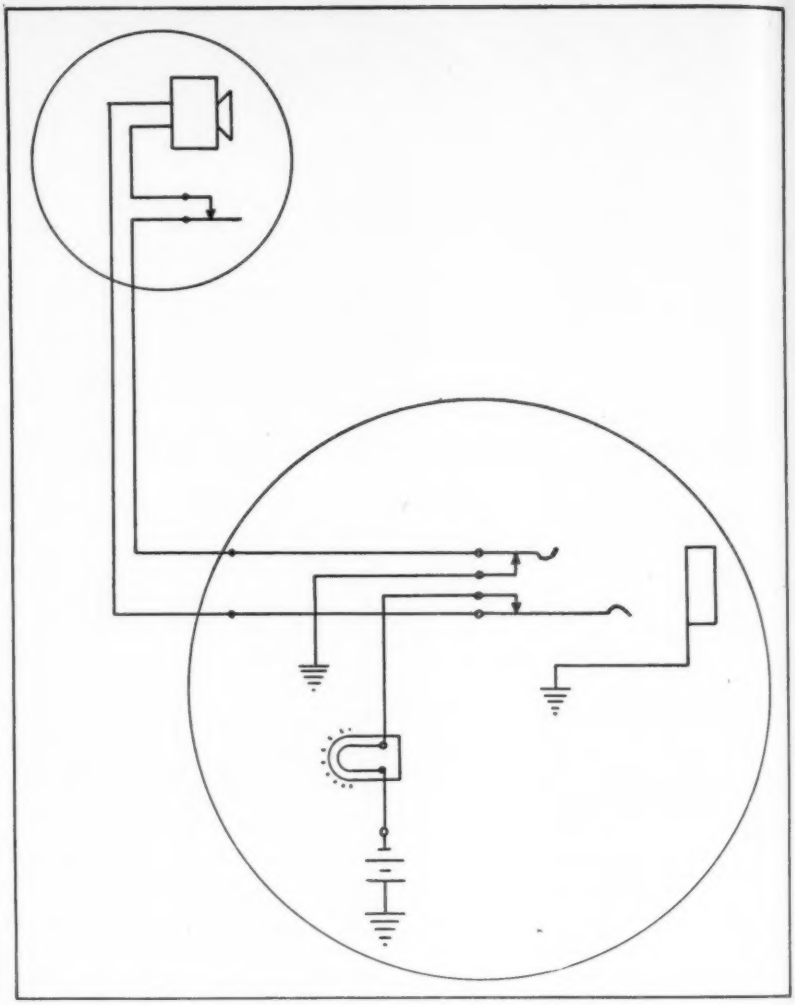


FIG. 2.

3). In this manner, the line lamp circuit is disconnected from both sides of the line; also, line battery and ground are removed. Jacks provided with this feature are called cutoff jacks.

In many respects, the history of the cutoff jack follows closely the pattern leading to the development of the subscriber station switchhook. An automatic switch was considered necessary to disconnect the telephone from the line when not in use. Hence, a convenient parking place for the receiver was combined with an electrical switch. Similarly, the cutoff jack, by removing battery and ground from the line when no longer required, permits establishment of the talking circuit as soon as the plug is inserted fully in the jack. It easily can be understood that this type of line signal cutoff arrangement eliminates an additional switch or key on the shelf or panel of the switchboard. This not only simplifies the mechanics of the switchboard, but also reduces the work for the operator.

The series line lamp circuit *(Fig. 2)* is suitable for use only where all the subscribers' stations are within a relatively short radius of the switchboard. If one station is near the switchboard and another is three or four miles away, there is considerable difference in the resistance in the line lamp circuit. As a result of this, the lamp of the station nearby would be much brighter than that of the distant station. Experience has indicated that it is necessary to provide uniform brilliance of all line lamps on the switchboard. Line lamp circuits, equipped with line relays, furnish uniform signal brilliance despite variations in the resistance of the subscriber loops. This proves true when the variations in resistance are those found up to a certain maximum above which increased line resistance would limit the line current to less than required to operate the line relays.

Line circuits equipped with line relays are quite similar to the original series line lamp circuit. The same cutoff jack, with its circuit opening features, is connected through a relay to ground. The line lamp, itself, is controlled through the contacts of the relay (See *Fig. 4*). The operating path of the line relay is opened when the plug is inserted in the jack. Hence,

the line lamp circuit is opened as the relay returns to normal. With this arrangement, all of the line lamp circuits have the same resistance and the lamps have the same brilliance.

The line pilot lamp is an auxiliary signal associated with all of the lines appearing on a single switchboard position. This lamp, located just above the key shelf, has a larger opal than the line lamp. If, during the hours of light traffic, one operator is handling several positions, the line pilot lamp signal assists her in locating the exact position on which the incoming call originates.

The line pilot lamps also are equipped with a buzzer or night alarm as an audible signal to further assist the operator in handling calls. A cutoff key permits silencing the buzzer, as desired. The pilot lamp and the buzzer are controlled by a separate pilot relay, which is arranged in the circuit to operate with any line relay.

When a connection is established with the called subscriber, the operator must have a means of supervising the call. She must know when the subscriber hangs up in order to disconnect, and also when a subscriber wishes to recall her for other service assistance. A supervisory lamp is associated with each cord of a pair. The supervisory lamp circuit often is referred to as the sleeve circuit, due to its termination on the sleeve of the plug. Usually, a fixed resistance of a definite value is included in the circuit in order to limit current flow through the lamp. The sleeve of the answering jack is grounded, thus, when the plug is inserted into the jack, the sleeve circuit is completed from battery to ground and the cord supervisory lamp is lighted (See *Fig. 5*). During the ringing of the called party, the supervisory lamp signal is visible through the opal on the key shelf. When the called party answers, the lamp is extinguished.

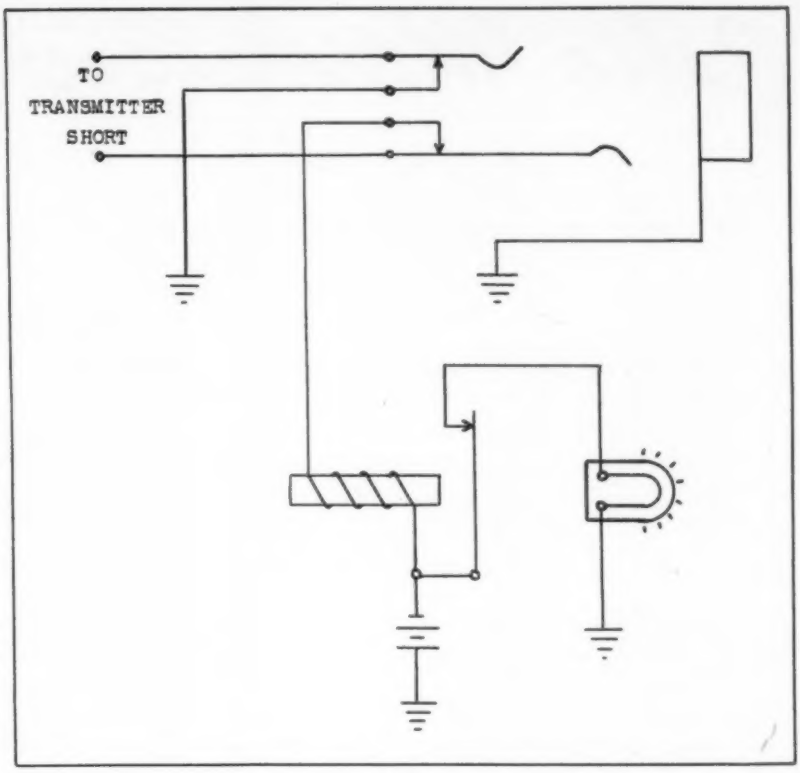


FIG. 4.

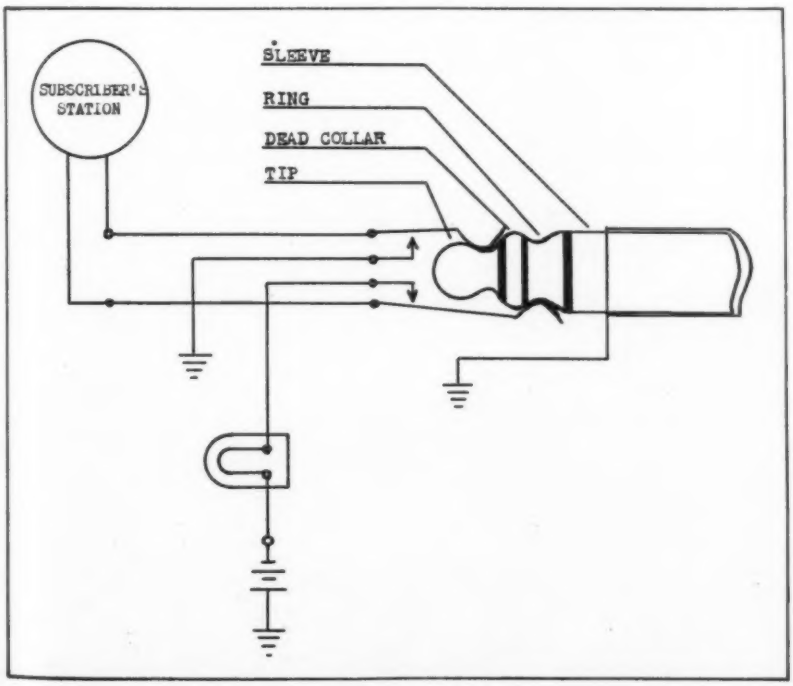


FIG. 3.

Another use of the supervisory circuit is found in multiple position switchboard installations. When the supervisory circuit is completed, through any one of the jack sleeves in multiple, a click will be heard in the operator's receiver set the instant a plug tip is touched to the sleeve of any one of the other multiple jacks of that particular line. This click, indicating that the line is busy, is caused by battery on the sleeve of the jack flowing through the path to ground provided by the tip of the plug. Theoretically, it is possible to insert the plug into a jack without making contact between the jack sleeve and the tip of the plug, however, operators on multiple switchboards are trained to make the busy test before inserting the plug into the jack.

The dead collar, placed between the tip and ring contacts of the plug, prevents the tip of the plug from making contact with the jack ring springs as the plug is being inserted into the jack. The elimination of this unnecessary contact not only saves false supervisory signals, but also makes insertion of the plug into the jack possible without

(Please turn to page 48)

Cable Maintenance

By DANIEL SEITZ
Cable Superintendent
York (Pa.) Telephone & Telegraph Co.

In this article, the author describes the use of a gas heated soldering iron and torch for the placing of sleeves on lead covered cable in lieu of a wiped splice. However, this is a new technique which has not been proved completely in field trial.

SOLDERING plays an important part in the construction and maintenance of all telephone plants. Numerous cases of service interruption may be traced directly to defective soldering. Therefore, only tested and approved methods of performing this work should be adopted.

If good results are to be assured, the following simple rules must be observed when soldering any metal:

(1) The metal must be clean.
(2) A suitable flux must be used for each type of metal to be soldered.
(3) A well tinned and properly heated soldering iron or a clean flame from a torch must be provided to melt the solder.

In observing these three simple rules, the results are likely to prove entirely satisfactory. Never use sandpaper for cleaning metal as it leaves a fine sand grit on the surface, making tinning difficult. A file, wire brush, or steel wool will prove much better. After the metal has been cleaned thoroughly and before it has had time to oxidize, a coating of flux should be applied.

Stearine is recommended as a flux for use on all lead work, including both the lead sleeve and cable sheath when wiped joints are to be made. For soldering copper wire, cable terminals, etc., resin core solder is more satisfactory. Stearine core solder is most convenient for running seams, repairing ring cuts, soldering air valves to the sleeves or sheath, for nitrogen gas testing and many other lead soldering operations.

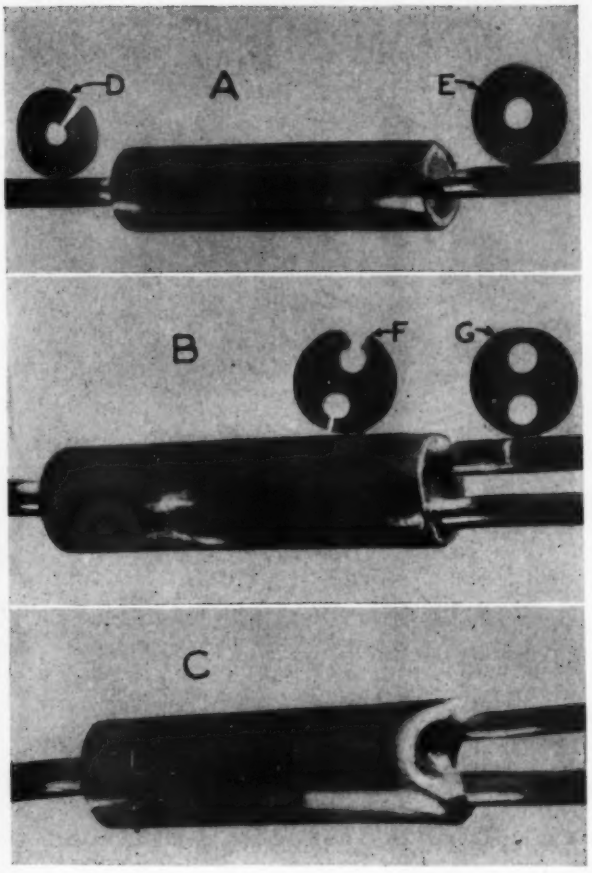
Fig. 1 shows the seam of a split lead sleeve being soldered by using stearine core solder and an acetylene gas torch. The sleeve is prepared in the same manner as when soldering irons are used. A piece of stearine core solder, the same length as the sleeve, is laid in the "V" and heat applied, beginning at one end and moving the flame as the soldering action progresses until the far end is reached. When a heavier seam is desired, it may be built up by applying the required amount of solder as the flame is moved along. If an extra heavy seam is to be run, moulds placed on each side of the seam will allow the extra thickness to be built up. However, for any ordinary sleeve, the first mentioned method will prove entirely satisfactory. With ordinary care, the seam can be run without the use of pasters being placed on each side of the seam.

Acetylene gas will be found satisfactory wherever it is permissible to use an open flame. It is clean, convenient, and efficient for soldering wires in cable terminals, making sheath repairs, placing lead sleeves and many other soldering operations throughout the telephone plant. (See *Fig. 5*).

The small tank and associated equipment, being light in weight, proves ideal for work on cross-county cables and other places inaccessible to motor vehicles. Sufficient hose should be provided to reach from the ground to work on the tallest poles. Also, a short length of six or eight feet will prove useful in repairing sheath breaks from a cable car as shown in *Fig. 2*.

The gas tank is slung from the seat of the car. Full tanks of gas may be purchased outright and exchanged when empty. The full small tank contains 250 pounds and is equipped with a small gauge to indicate the gas pressure at all times. A regulator, *Fig. 1-C*, controls the flow of gas. The torch is very light in weight and the flame stems are interchangeable. There are four sizes available, but two or three different sizes are all that are necessary to perform any cable solder work from a small ring cut to removing the largest wiped joint. This operation can be performed in

Fig. 1. Acetylene gas equipment for soldering.



LEFT PHOTO: Fig. 2 illustrates soldering ring cuts with acetylene torch, also shows torch tip and soldering iron kit. RIGHT PHOTO: Fig. 3 illustrates lead sleeves placed over splices by acetylene torch method.

much less time than with the ordinary blow torch.

Soldering irons also may be heated by acetylene gas from the same tank and regulator equipment as is used for the torch. *Fig. 1-A* shows a soldering iron for general purpose work. The size of the iron should suit the work to be performed in the same manner as when irons heated over a fire pot or gasoline torch are used. In most cases, however, a size smaller iron will do the job because the heat is constant and can be regulated by adjusting the needle valve, as indicated in *Fig. 1-B*. With the temperature of the iron held constant, continuous soldering operations may be carried on.

Rule No. 3 demands a properly heated soldering iron, which means that it must be hot enough to flow the solder properly by heating the metal to the right temperature, but not so hot that the tinning of the iron is destroyed. Not only is this equipment suited for light soldering and patch work, but it also may be used for placing lead sleeves over splices without wiped joints. *Fig. 3-A* illustrates a straight sleeve placed over a splice without the conventional wiped joint. The two details "D" and "E" are end plates attached to the cable by soldering with the torch. These plates are cast lead and are slightly smaller in diameter than the sleeve. Plate "D" is for use on cables already spliced and "E" is for new cables when the end plate can be slipped over the sheath before splicing begins.

The disc "D" should be cut with a piano wire rather than sawed because it will close tighter after it is placed on the cable. After these end plates are in the proper place on the cable they may be soldered to the sheath, first on the inside and then on the outside. When the splice is ready for placing the sleeve, it is beaten in slightly to fit the end plate snugly and stearine core solder is run around the edge of the sleeve and heated by the torch.

When it becomes necessary to remove one of these sleeves, it can be accomplished easily with the torch by unsoldering around the edge of the sleeve and sliding it off over the end plates. This operation can be performed without damaging the sleeve as is so often

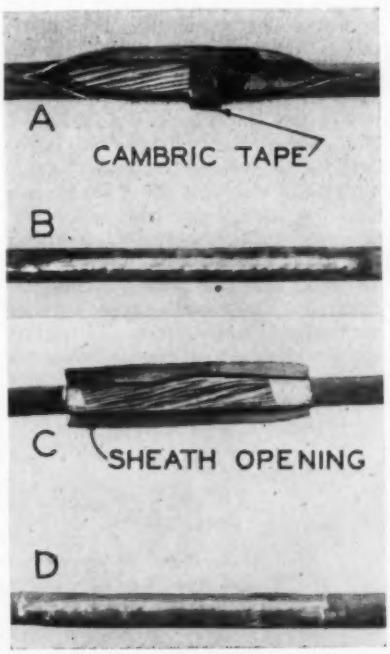
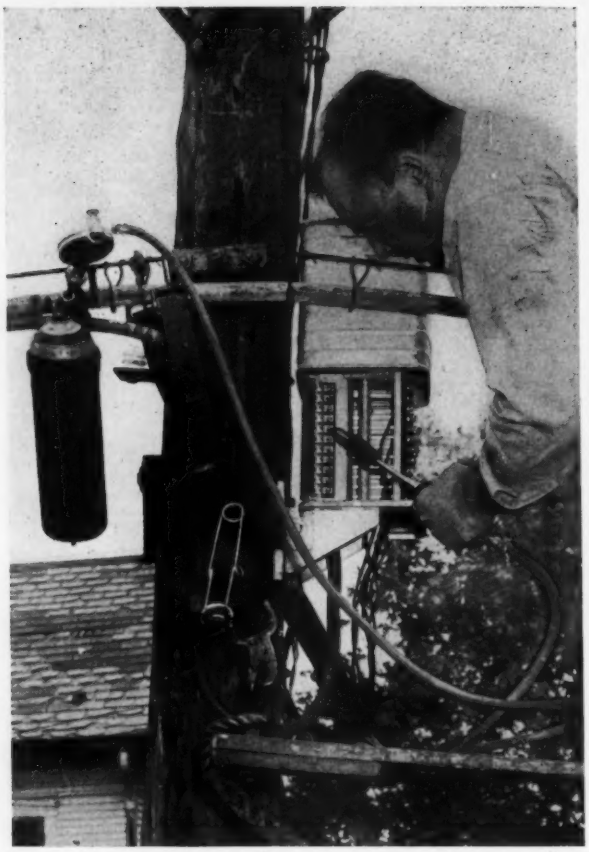


Fig. 4. Cable repairs made by splitting sheath and soldering by acetylene torch method.



LEFT: Fig. 5, soldering in a cable terminal with an acetylene heated torch. RIGHT: Fig. 6, removing a wiped joint with the acetylene torch.

the case with a wiped joint. (See *Fig. 6*). Two or three-way splices are made in the same manner as the straight splices, except that different end plates are required. *Fig. 3-F* is an end plate for cable that is already spliced and plate "G" is for new work. The straight end of this sleeve is made as shown in *Fig. 3-A*.

Fig. 3-C illustrates a two-way splice with the straight end closed as shown in *Fig. 3-A*, with the two-way end beaten in for a wiped joint. Instead of wiping the joint, however, it is made waterproof by soldering with stearine core solder and an acetylene torch. Opening the beaten-in end of a sleeve sufficiently so that it may be slipped off over the splice and then replaced in its original shape is always a difficult task. Quite often, with the wiping method, a new sleeve must be used.

Beating in the two-way end and soldering it is not recommended unless there is sufficient space beyond the two-way joint to allow the sleeve to be moved in that direction if and when it becomes necessary to open the splice for subsequent testing, changing counts, etc.

Perhaps one of the most difficult jobs for most cable men is the wiping of the upright joints. This can be accomplished much more easily by using end plates and stearine core solder, together with the acetylene torch. This method also requires less time. The acetylene torch also is valuable for making sheath repairs.

Fig. 4-A shows an opening made for clearing a lightning burn. After the fault is cleared by taping the damaged insulation with non-corrosive plastic tape, and the wires of the cable are wrapped with cambric tape, the sheath is replaced in the original form and soldered as shown in *Fig. 4-B*.

A trouble opening made to clear a wet fault is indicated in *Fig. 4-C*. Prior to opening the sheath, grooves were cut with a small round file about half way around the cable. Then, the sheath was cut horizontally between the two grooves and the sheath laid back as shown. After the fault was cleared by the use of dessicant, the sheath was replaced as in *Fig. 4-D*. Anyone experienced in soldering easily may perform any of these operations.

Fiction's renowned detective, Sherlock Holmes, had nothing on a resourceful Ohio Bell Telephone Co. operator, who attempted to locate a Canton girl's soldier boy friend, who, it appeared, was in a Colorado army hospital, which one, the girl could not remember.

Armed with the soldier's name and serial number, the operator went to work, checking three hospitals before she learned that the GI was in Goshen, Ind., on a furlough. The Goshen operator reported no such name in the directory, and the draft board there also could give no information.

The operator then hit upon calling the police, who located the missing serviceman.

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A. L. Hart, Abilene, Kan.—*Vice-Chairman.*
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F. S. Barnes, Rock Hill, S. C.
H. V. Bozell, New York, N. Y.
V. E. Chaney, Chicago, Ill.
Merle Hale, Lincoln, Neb.
L. W. Hill, Tarboro, N. C.
Gustav Hirsch, Columbus, Ohio.
R. H. Manson, Rochester, N. Y.
J. W. Morrison, Rochester, N. Y.
R. A. Phillips, Sioux Falls, S. D.
H. W. Pike, Madison, Wis.
R. E. Shotts, Columbus, Ohio.

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INDUSTRY ADVISORY COMMITTEE:

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DOMESTIC BROADCASTING COMMITTEE, IV:

C. D. Brorein, *Principal.*
Clyde S. Bailey, *Alternate.*

TELEPHONE COMMITTEE, X:

V. E. Chaney, *Principal.*
Clyde S. Bailey, *Alternate.*

COMMUNICATIONS LIAISON COMMITTEE FOR CIVILIAN DEFENSE, XII:

Clyde S. Bailey, *Alternate* (To R. I. Mabbs, of AT&T, representative from Committee X).

PRIORITIES LIAISON COMMITTEE, XIII:

V. E. Chaney, *representative* from Committee X.

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RADIO COMMUNICATION, PANEL 8:

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RADIO RELAY SYSTEMS, Panel 9:

B. C. Burden, *Member.*

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B. C. Burden, *Representative.*

U. S. CHAMBER OF COMMERCE:

Carl D. Brorein, *National Councillor.*

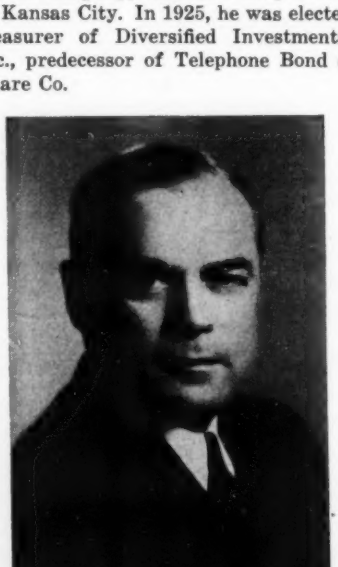
Chaney Named Executive Vice President of Telshare

Verne E. Chaney, for many years identified in various executive capacities with companies of the Gary Group, has been elected executive vice president of Telephone Bond & Share Co., and has moved from Fort Wayne, Ind., to make his headquarters at the Gary offices in Chicago.

Mr. Chaney will continue general executive direction of the Telephone Bond & Share and community companies, and gradually will take over general executive direction of all operating telephone companies in the Gary Group. He will retain his positions as vice president of Theodore Gary & Co. and of Gary Services & Investment Co., as well as other official positions he holds with the various operating companies in the Gary Group.

Mr. Chaney's career in the Independent telephone field dates from 1910. After serving three years in the accounting departments of the telephone companies at St. Joseph and Joplin, Mo., he entered the accounting department of the Theodore Gary Investment Co., Kansas City, remaining there until World War I, during which he saw active service in France, being a sergeant in the artillery battery of which President Truman was captain.

Upon his return, Mr. Chaney served for a period with the Texas Telephone Co. and again was transferred to the parent company, Theodore Gary & Co., at Kansas City. In 1925, he was elected treasurer of Diversified Investments, Inc., predecessor of Telephone Bond & Share Co.



V. E. CHANEY

During the past 20 years, Mr. Chaney has held various administrative positions in the Telephone Bond & Share system, and its affiliated operating and service companies. He has served on the executive committee of the United States Independent Telephone Association, and at present is second vice president and a member of its board of directors.

V V

Western Union Plans Radio Relay System

The Western Union Telegraph Co. October 22 announced plans for a $62,000,000 radio relay system which will link the nation's major cities within the next seven years and eliminate thousands of miles of poles.

Super-high frequency radio beams will take the place of present telegraph wires and it will be possible to transmit as many as 1,080 messages simultaneously over one beam—many more than by wire, it was stated.

Announcement and details of the contemplated development came from A. N. Williams, president of Western Union, and company engineers.

THE ANSWER TO SERVICE

Demand Is More Service

By **FRANCIS X. WELCH**
TELEPHONY's Washington Editor

Announcement

LIEUT. CMDR. and Mrs. Warren T. S—, USNR, are pleased to announce to all their friends the delivery at their home, of a little five-pound stranger, at 11 a.m. on Tuesday, October 9, 1945. The delivery was made in exceptionally good order and was especially welcome because of the long expectancy and several previous bitter disappointments. In appearance, the little fellow is truly beautiful — coal black all over. It makes some noise now and then, but nobody minds. In fact, it is hoped that the newcomer will make a lot more noise after this announcement gets around to friends and acquaintances.

His name will be "Plaza 4859." The parent, the Bell Telephone System, is doing very well, indeed, according to the last reports to the stockholders.

A cute way of announcing a new telephone installation, you may say of the above paragraphs. You may even agree that the author (or authors) of this witty little squib which (with alterations in the name and number, for obvious reasons) actually was sent to their friends in a certain eastern city, is entitled to some innocent fun in ribbing the telephone companies for the delay in making the installation. Of course, the public generally understands why the demand for new telephones has exceeded the supply to such an extent. Telephone industry publicity, so far, has done an effective job in impressing on the public the explanatory factors involved: The wartime cessation of manufacturing, against an upswing in demand; the manpower and material shortages, etc.

In fact, our little gag announcement is, in its own way, a back-handed compliment to the essentiality of telephone service, in that its accessibility could be looked upon, even in jest, as such a desirable treasure.

Discusses period of transition between wartime and peacetime telephone service, saying the public's good humor is going to have to be retained by intensive and persistent devotion to astute public relation practices which will keep public attention occupied with descriptions of things to come while manufacture and operating reinforcements can be brought up to supply the demand.

But the war is over, and the same patience and fortitude with which the American public on the home front did with less, or did without, no longer is supported by the stern starch of patriotic necessity. The public appetite for prewar service rapidly is returning to prewar dimensions in all lines. Compare this situation with the fact that the telephone industry still is faced with at least another year in catching up with the backlog of "held orders" and it readily will be seen that the industry's public relations are in for a bit of a strain.

What can be done about it? At the outset the blunt physical fact is that the manufacture, distribution and installation of central office and other equipment, including telephone sets, is not going to give way very much. The future months look promising, perhaps more promising than they did on VJ-day. There also is the likelihood that the large "held orders" list will soften up a bit, as war workers go back to their earlier homes or seek other places of employment.

But, on the whole, the good humor of the public is going to have to be retained, for a while at least, by intensive and persistent devotion to astute public relation practices. It isn't a question of public relations functioning as a *substitute* for rendering service; that always is a fatal conception of public relations. It is a case of public relations temporarily filling the role of "Horatius at the Bridge," or, in plain words, keeping public attention occupied with a description of things to come while manufacture and operating reinforcements can be brought up to supply the demand.

In Europe or foreign countries generally, which have never known any different, such a delay in service would be accepted without much thought or complaint. It is another back-handed compliment to the achievements of the American telephone industry that our domestic public has been used to a deluxe standard of service and once so educated, it does not forget easily. Nor should the telephone companies *want* it to forget.

Perhaps an analogy to the industry's present situation might be taken from the old vaudeville days when there was a necessary gap between so-called "heavy" acts, requiring a good deal of scene shifting and mechanical operations back stage. This gap usually was filled in by a smooth talker or singer

or other entertainer whose act did not require special props, but who could hold audience attention long enough, against a mere velvet back-drop, while the stage behind him made the necessary transition.

It certainly is fair to say that the telephone industry now is in the transition period between two mighty "heavy" acts. It has performed its "wartime act" nobly, to that we all are agreed. It is preparing to perform a postwar, or "reconversion act," bigger and better than any similar attraction ever seen before, to use the showman's language. There is no particular disagreement with that. But what are we going to do while the stage is being shifted? The answer, in this writer's opinion, is to talk service and more service. This could mean not only talking about the attractive new features of service, which the industry is prepared to bring to the public, but also discussing how the public best can use service already available, or service which will become available shortly.

Take, for example, the mobile radiotelephone or so-called automobile telephone which is now being put into operation in a few test areas. This promising new field of telephone service got off to a rather questionable start from a public standpoint because a good many city desk comedians saw an opportunity to poke fun at the idea. They editorialized the fact that a good many people don't want to be bothered with a telephone while they are driving an automobile.

Of course, it never has been seriously proposed that this service will be available to every automobile registered. Certainly people will not have to take it whether they like it or not. Yet, this writer has seen dozens of editorials from various newspapers and other publications kidding the idea of an automobile telephone. They ignore entirely the reasonable, practical and astonishing advantages and possibilities of such service. These editorials have been having fun picturing the plight of the hen-pecked husband trying to escape an overdose of connubial bliss by driving to a little poker game, or the harassed doctor trying to avoid the hypochondriac in his office by playing hooky on the golf course, and similar situations whereby mankind is bedeviled by the complexity and tempo of modern civilization.

Some of the publicity which has been given to this interesting new service has caused even this cynical writer, some concern. Not long ago your correspondent picked up a magazine with a national display advertisement by a radio manufacturer which pictures a fisherman bragging from his boat on the very scene of a big catch to his wife who is sitting at home getting all the details by telephone. Obviously, this sort of thing isn't going to make for the old-fashioned kind of fishing most of us have enjoyed in the past.

Imagine the problem confronting Washington Irving if he were to try to write "Rip Van Winkle" in such a modern setting. Poor Rip would escape from the watchful eye of his wife with his trusty rod and dog to his favorite fishing hole, only to be brought up short by an infernally buzzing instrument his wife had concealed in his creel. We easily can imagine Rip would be quite willing to go to sleep for even more than 20 years under such circumstances.

Coming back to more conventional telephone operations, it is a fact that telephone publicity so far has, in a transposition of the words of the recently popular song, tended to "accentuate the negative and eliminate the positive." In plain words, during the war the industry had to explain why telephone service was not up to par in some particulars, and why new prospects for service had to wait.

But is the public going to be satisfied with that line indefinitely? We can see the red flags waving already in some areas by the way people are beginning to kid about telephone delays. When the public begins to joke about a thing, it isn't very long before they begin to get angry about it. And when they get angry about it, the ground is very fertile for the growth of some strange fruit, such as public ownership ideas which already have been put in circulation in some quarters. These ideas hopefully are being kept alive, but so far without much nourishment.

Isn't there a possibility that the industry, itself, can fill in this annoying little gap by talking about things to come, things which the average telephone users do not know are even in store for them? Maybe. The cautious reaction to this is that there is danger of overdoing it—of building hopes too high. There would be merit in this criticism if, in fact, the industry were not sure of fulfilling such hopes or promises. But we know they are on the way. Why not use this little "intermission" to talk about them?

The trouble with American business in the past has been that very superabundance of caution. It may have been well founded and economically very sound. But it did not, and does not, pay off in terms of public favor. The reason is that the politicians always grab the ball and run with it. They grab the ball by promising the public even more than industry ever is able to fulfill. This puts private industry in a false position of explaining why things cannot be done, of giving the public nine or 10 good reasons why such and such an idea is impossible or crazy. Even if the public is convinced in the long run, it is convinced against its own will and none too happy about it.

Last month before the American Gas Association meeting in New York City, Ralph W. Gallagher, chairman of the board of Standard Oil Co. of New Jersey, presented a challenging address. He stressed the need for American businessmen to take the initiative in trying to solve public problems, meet public demands and answer public questions from the standpoint of industry. Showing up fallacies, he said, was most important, but not enough because it indicated only a defensive attitude and did not represent a positive response to public needs.

He pointed to several instances during the past 12 years where the politicians have taken the ball away from private industry by default, simply because private industry wouldn't run with it. The result was irresponsible people, such as the promoters of the Townsend Plan, got the American public all excited about their impossible schemes for old-age security, while private industry sat on the sidelines grumbling that it couldn't be done.

Where there is a public demand, *somebody* is going to fill it or make a pretense of filling it. If private industry doesn't do so, watch out for politicians using it as an opportunity for peddling their own line of panaceas or soothing syrups and pointing to the situation as an example of the "breakdown" or "failure" of private enterprise.

As Mr. Gallagher pointed out, what finally happened in the case of the public demand for old-age security, was a social security law which was worked out along more practical lines and everybody forgot about the Townsend Plan. How much better, of course, would it have been if private industry could have brought forth that solution in the first place or something even better—more within the framework of private enterprise and private enjoyment.

Mr. Gallagher continued that so-called "crackpot ideas" are symptoms of public restlessness which may deserve more consideration than usually is given. He added, "Let us never be so intent on pointing out the 10 good reasons why something won't work that we give the impression that we don't want it to work."

Of course, Mr. Gallagher was talking about industry generally and the public generally, and broad questions of public controversy. But we have, in a specialized sort of way, the same situation in the telephone industry. We already hear talk in some political quar-

ters of the failure of industry to spread its service sufficiently, or lower its rates sufficiently, etc. We know from experience that kind of talk is only the build-up for the inevitable proposal that private industry stand aside and let the government see what it can do.

Now isn't there a chance, here, to reverse the situation and put the politicians on the defense? What the post-war world calls for is going to be bold thinking, bold talking and audacious planning. Private industry is going to have to do this in self-defense, because if it doesn't do so, public attention is going to go to the big-talking politicians by default. There may be good, sound reasons for the cautious policy of letting "actions speak louder than words," but any politician will tell you that you never could be elected dog catcher on such a platform.

You may point out that politicians can feel perfectly free to make irresponsible promises because they have no economic obligation at stake. They first dream up a public demand and then dream up fulfillment of it with other people's money. True enough. If the dreams fail to materialize, few people blame them or even remember them. If they do, the politician always can fall back on the stock answer that private industry didn't do its part. That is why we see people on the street cars these days reading popular priced booklets promising 60,000,000 jobs, 30-hour weeks, all sorts of deluxe housing and conveniences for every family in America. It doesn't cost anything to dream, if you have no economic responsibility of your own at stake.

Yet, this situation *can be reversed*, if private industry would only step up to the platform, or microphone, and say that it is prepared to fulfill all these promises and more, *subject only to the handicaps and limitations which are placed upon it by government*, such as taxes, wage obligations, price and rate regulations, etc.

In the past, under the old-fashioned, sensible economy, industry had to plan ahead on the basis of what it knew it could do. It carefully tested the ground ahead of it, before making any forecasts. Often, it just went ahead and did things even before there was any public demand, and there was little publicity about it.

Under the new dispensation (where industry almost is compelled to match dreams with professional dreamers), perhaps the opposite objective might be a good starting point. It is worth thinking about, at any rate. For example, instead of the telephone industry figuring out how many subscribers it can serve this year and the next year or ever admitting that there is a realm into which it never could put its service, why not start out by emphasizing the *absolute maximum potentiality* of the telephone? What would it cost, for example, to serve every house and business establishment in the entire United States, including every farm dwelling right down to the shack on Tobacco Road? With this as a starting point, it is easy enough to back track towards the more practical forecast and give the reasons for back tracking. The reasons probably will put the responsibility in quarters which the politicians won't like, but it would put them on the defensive if they ever tried to explain them away.

For the particular telephone company, the ultimate objective ought to be, service to every family and business place and farm in its service area. More than that, it ought to be concerned with increasing the possibilities of service already established. PBX for residence service to head off the specter of holding time or calls as "busy" saturation begins to show its head on the horizon of everyday telephone usage.

It is unnecessary for this writer to fill in the details. The telephone company men know what to talk about along this line better than he does. They have talked about it often enough among themselves, in public conferences and at their association conventions. Why not talk about it to the public? To the extent that these things cannot be made available to the public, why not explain why and how soon they *can* be made available?

Yes, there is lots to talk about. One could abstract a dozen worthy articles which have appeared in TELEPHONY during the past six months on such subjects as selective ringing, long distance dialing and dial conversions, improvements in directory service, the possibility of increased "special services." This volume of material, alone, would keep a publicity writer and talker for a telephone company busy for months and months if he gave it suitable and expert treatment. It would take up, very gracefully and quite tactfully, the entire transition period which the industry now is undergoing before it gets fairly well settled back on the reconversion track of accrued service demand.

The public would like it, too. After all, have you ever seen people at the movies resent those little trailer digests of the picture which is going to be shown next week? The purpose of that trailer is more than promotion. It is to fill in a gap between two complete shows. The telephone industry now finds itself between two complete shows, and how. There ought to be a moral in this somewhere.

FCC to Investigate Recorder Uses

A broad investigation was voted by the Federal Communications Commission on October 31 into the use of recording devices with respect to interstate and foreign telephone communications. As a result, a general hearing has been ordered for January 10. The proceeding arose with respect to tariffs filed by six Bell System companies and one Independent company, which would forbid use of recording devices in connection with use of telephone facilities. The six Bell companies are Bell Telephone Co. of Pennsylvania, Diamond State Telephone Co., and the four Chesapeake & Potomac Telephone companies. The Independent company is Bluefield Telephone Co., Bluefield, W. Va.

Copies of the investigation order are to be served on all telephone companies subject to FCC jurisdiction, including both Bell and Independent. In addition, the following eight manufacturers of recording devices are being served with the order: Soundscriber, Dictaphone, Inc., Thomas A. Edison, Inc., the American Type Founders Association, Gray Manufacturing Co., Frank Rieber, Inc., Memovox, Inc., Speakaphone Corp.

The National Association of Railroad & Utilities Commissioners, United States Independent Telephone Association, and state regulatory commissions have been invited to participate to the extent of their interests in the subject.

The FCC investigation order laid down eight points of inquiry which will define the scope of the investigation: These are, in substance, as follows:

(1) Nature and extent of the need for usage of recording equipment.

(2) Possibility of interfering with privacy of telephone communication.

(3) Whether suitable protective devices are or can be developed.

(4) Whether tariffs of the six Bell companies and the Independent company prohibiting the use of the device in connection with telephone conversations are lawful.

(5) Whether the FCC should itself prescribe a tariff covering the subject and, if so, what kind of a tariff.

(6) Extent to which usage of a recording device is covered by Section 605 of the Communications Act (dealing with secrecy and confidential nature of communications service).

(7) Whether Congress should enact further legislation.

(8) Whether present usage of recording devices amounts to violation of existing laws and regulations.

The use of the phrase "interstate and foreign toll telephone service and facilities," which recurs in the FCC order of investigation, suggests that the commission may confine its investigation, from a legal standpoint, to the use of recording devices in relation to toll telephone service, as distinguished from local exchange service.

LET LEICH SERVICE FIT INTO
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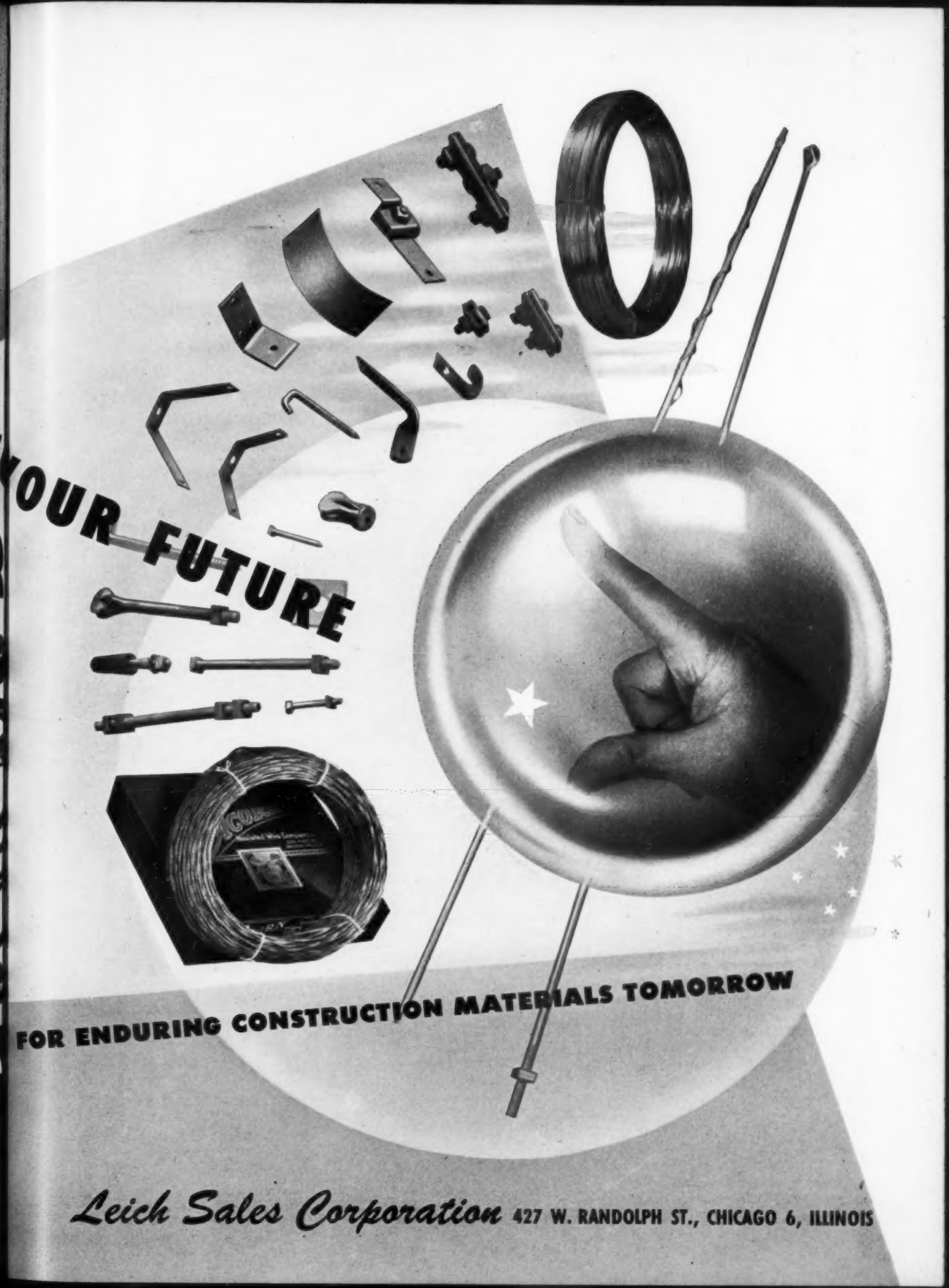
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THE PLANT MAN'S NOTEBOOK

BY RAY BLAIN • TECHNICAL EDITOR

SEVERAL telephone engineers recently were overheard discussing the longest cable span it would be possible to construct. Some were of the opinion that a 300-ft. span was about the longest that could be maintained, while others thought that 1,000-ft. spans or longer would be entirely possible. None of them, however, had information of long spans in actual service. If anyone has information on long cable spans in use, we would appreciate receiving statements as to what difficulties, if any, are encountered in their maintenance.

* * *

The use of the chain hoist in the telephone industry is increasing at a rapid rate. The hoist is used to advantage in lieu of block and falls for pulling guys and work of similar nature.

* * *

Recently, the writer had the pleasure of examining a sample of drop wire insulated with nylon compound. This material would seem ideal for insulation, as it is light in weight and extremely tough and durable.

* * *

It now appears certain that in the not too distant future, many operating telephone companies must agree to joint construction of telephone and rural electrification lines in many localities. This action will require specific new construction practices and the development of materials to meet this particular need.

* * *

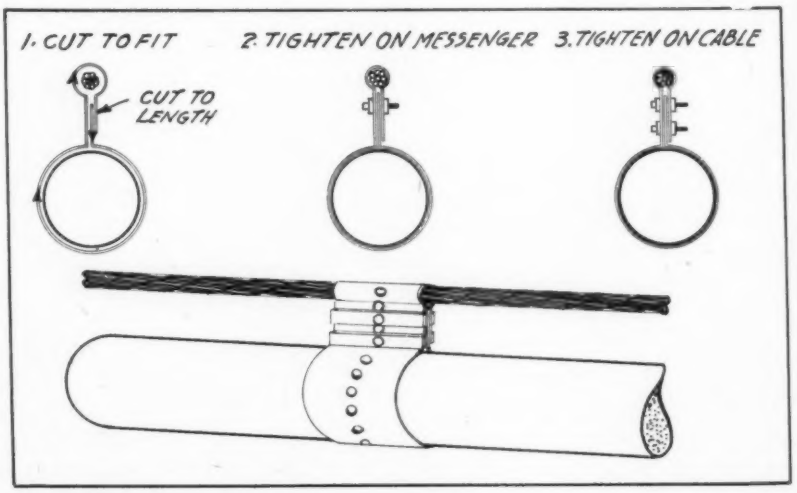
A reader inquires as to whether wires should be tied to the insulators on a point type transposition. Information at our disposal indicates that wires need not be tied to the insulators except when located on crossing poles, storm guyed poles, or at other locations where wire replacement would be difficult and expensive. When wire is tied to the insulator on a point type transposition, the horseshoe type tie should be used.

* * *

It is believed that, in the future, all trouble trucks will be equipped with spot lights. Such lights prove most useful during storms or disaster when lines must be repaired in darkness.

* * *

We are indebted to Robert I. Devore of Henderson, Nev., for the grade clamp indicated in the accompanying sketch which can be fabricated locally. The design is described as follows:



The cable grade clamp is made up of a strip of soft galvanized iron, 28 gauge, 2½ ins. wide, with ¼ in. holes on ½ in. centers, which may be made at a local sheet metal shop in convenient to handle lengths. The clamping washers are 2½ ins. long, ⅝ ins. wide and ⅛ in. thick, with ¼ in. holes slightly off center. The bolts are ¼ in. No. 20 thread, and the bolts and nuts are cadmium or bronze plated to prevent rust.

Method of application is very simple as shown in the sketch. The strap is fitted (for length) around the strand and cable, and tightly clamped around the strand with two washers. As these washers are off center, it provides an easy method of matching the holes in the washers and metal strip. In the event of having two cables on one strand, one hung below the other, the strap is fitted over each one separately, as illustrated. This hanger or clamp also may be used successfully as a sleeve support. When this is done, care should be taken to preserve the distance between cable and strand, varying with the depth of ring used.

This clamp absolutely will prevent movement of the cable even on very steep grades, with no damage to the sheath. No shim is needed and, of course, the size of cable or strand does not affect the application. A handy tool for placing this clamp may be made in a "T" shape, with a "hex" wrench on one end, and a long, blunt point on one end of the "T" section, to use in aligning the holes for the bolt.

YOUR BEST MOVE

for tree maintenance!...Tools from AUTOMATIC ELECTRIC

With winter rapidly approaching, now's the time to plan your tree maintenance. Neat, well-trimmed trees not only assure better service for your subscribers (and less bad-weather maintenance for you!) but also help insure the good-will of your community.

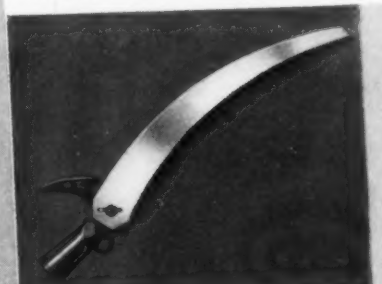
You'll find your "best move" for time-saving and efficient tree trimming is . . . tools from Automatic Electric. Every tool shown is the product of a reliable manufacturer and is highly endorsed by practical telephone men. Check our big catalog today . . . there's a tool for every pruning need.

NEWMAN TREE TRIMMER Aluminum alloy head, with cutting parts of high carbon tool steel. Metal parts are rust-resistant.

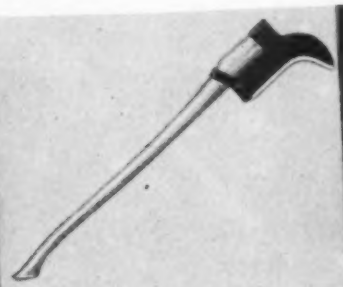
BUSH SCYTHE AND SNATH Ideal for trimming low growth. Lightweight—easy to handle. Crucible steel blade is easy to sharpen, and holds its edge.

ONE-MAN SAW Handy for tree and pole cutting. Keen cutting edge seldom needs sharpening. Furnished in several sizes.

TUTTLE-TOOTH PRUNING SAW Roomy Davey pattern handle made of air dried beech, reinforced with dowel pin.



SEYMOUR SMITH PRUNING SAW For heavy-duty cutting—16" replaceable blade adjusts to six angles.



BUSH HOOK Hooked blade, 11¼" long, is made of quality crucible steel. Stout hickory handle is 36" long.

SEYMOUR SMITH PRUNER Head has only two moving parts. Highest quality steel blade, vanadium steel spring. Sectional handle.

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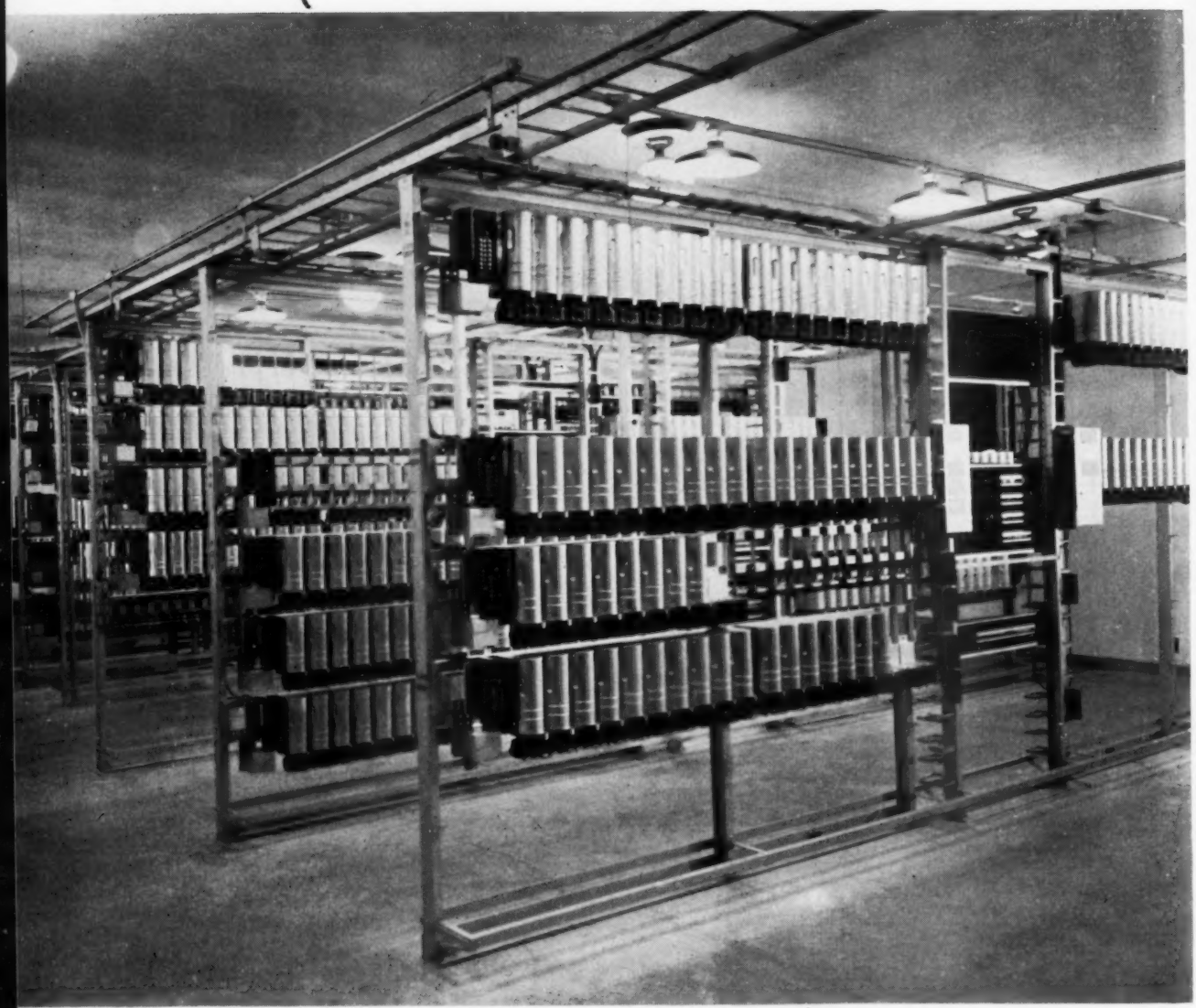

COLLEGE VIEW OFFICE, LINCOLN, NEBRASKA

The Lincoln Telephone and Telegraph Company has been a user of Strowger Automatic for more than forty years, and now uses that equipment in more than a score of exchanges, both large and small.

Certainty vs. ?

STROWGER AUTOMATIC TELEPHONE EQUIPMENT is the only automatic telephone switching equipment manufactured for Independent telephone companies and suitable for large single-office and multi-office areas as well as small exchanges, for which the relative cost of operation, maintenance and normal replacements can be predicted with reasonable accuracy and for years in advance.

THIS IS BECAUSE Strowger is the only automatic equipment which has been in use long enough, in a sufficient variety of places in the United States and under a sufficient variety of conditions to provide the comprehensive records upon which such costs can be based.

IT IS THE TELEPHONE COMPANY that takes the risk when there is no basis of experience for predicting such costs.

FIFTY YEARS OF STROWGER OPERATION in the United States have proved, as to costs and otherwise, that the telephone company does not experiment when it installs Strowger!

AUTOMATIC ELECTRIC

Originators and Developers of Strowger Step-by-Step Machine Switching Automatic Dial Systems
Makers of Telephone, Signaling and Communication Apparatus . . . Electrical Engineers, Designers and Consultants

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AUTOMATIC ELECTRIC SALES CORPORATION, 1033 W. Van Buren St., Chicago 7, U. S. A.
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Teletalk Helps Your Subscribers

to Get Better Service From Existing Telephone Equipment

WEBSTER ELECTRIC

Teletalk

REG. U.S. PAT. OFFICE

. . . Adds hours to your work week

● You perform a double service when you encourage your subscribers to install a Teletalk Inter-communication System as a supplementary aid to their present telephone equipment. You help them to make fuller use of their telephone lines by freeing them from the load of inside calls—and you add to your own revenue as a natural result of increased use of trunk lines for revenue-producing calls.

An example of Teletalk's value is that a subscriber, while talking on his telephone, can get instantly customer information on orders, stock, shipments, accounts, work in process . . . all by the accurate voice-to-voice method that Teletalk provides.

There are many commercial telephone subscribers right in your territory who need Teletalk—and need the time-and-energy savings and increased operating efficiency made possible by Teletalk. Stores, offices, banks, schools, hospitals, industrial plants—small organizations, as well as larger ones—can show substantial savings by installing a Teletalk system. Teletalk is easy to install; it is powered from the regular lighting circuit. . . . Write for full information.

FINISH THE JOB—
BUY VICTORY BONDS

Licensed under U. S. Patents of Western Electric Company, Incorporated and American Telephone and Telegraph Company

WEBSTER ELECTRIC

Racine, Wisconsin, U.S.A. • Established 1909 • Export Dept.: 13 E. 40th Street, New York (16), N.Y. Cable Address "ARLAB" New York City

"Where Quality is a Responsibility and Fair Dealing an Obligation"

Randolph Eide to Head Bell Pioneers Group

Randolph Eide, president of the Ohio Bell Telephone Co., Cleveland, has been elected president of the Telephone Pioneers of America.

RANDOLPH EIDE

The organization is composed of Bell telephone workers who have spent 21 or more years in the telephone business in the United States and Canada. Mr. Eide surpasses that requirement by nearly 14 years, as he will receive his 35-year Bell System service emblem next March. There are more than 97,000 telephone pioneers in the organization.

Mr. Eide was born at Lee, Ill., attended public and high schools in Lee, and completed his academic course at the University of Illinois Academy. He enrolled in the College of Liberal Arts & Sciences at the University of Illinois, specializing in economics and English, and was graduated in 1910 with the degree of bachelor of arts.

Entering the telephone business on March 27, 1911, as a traffic student with the New York (N. Y.) Telephone Co., Mr. Eide later held Bell System positions in New Jersey, St. Louis, Mo., Detroit, Mich., and Columbus, Ohio, going to Cleveland in 1921. He became Ohio Bell president on April 24, 1930, and is a member of the board of directors and the executive committee.

V V

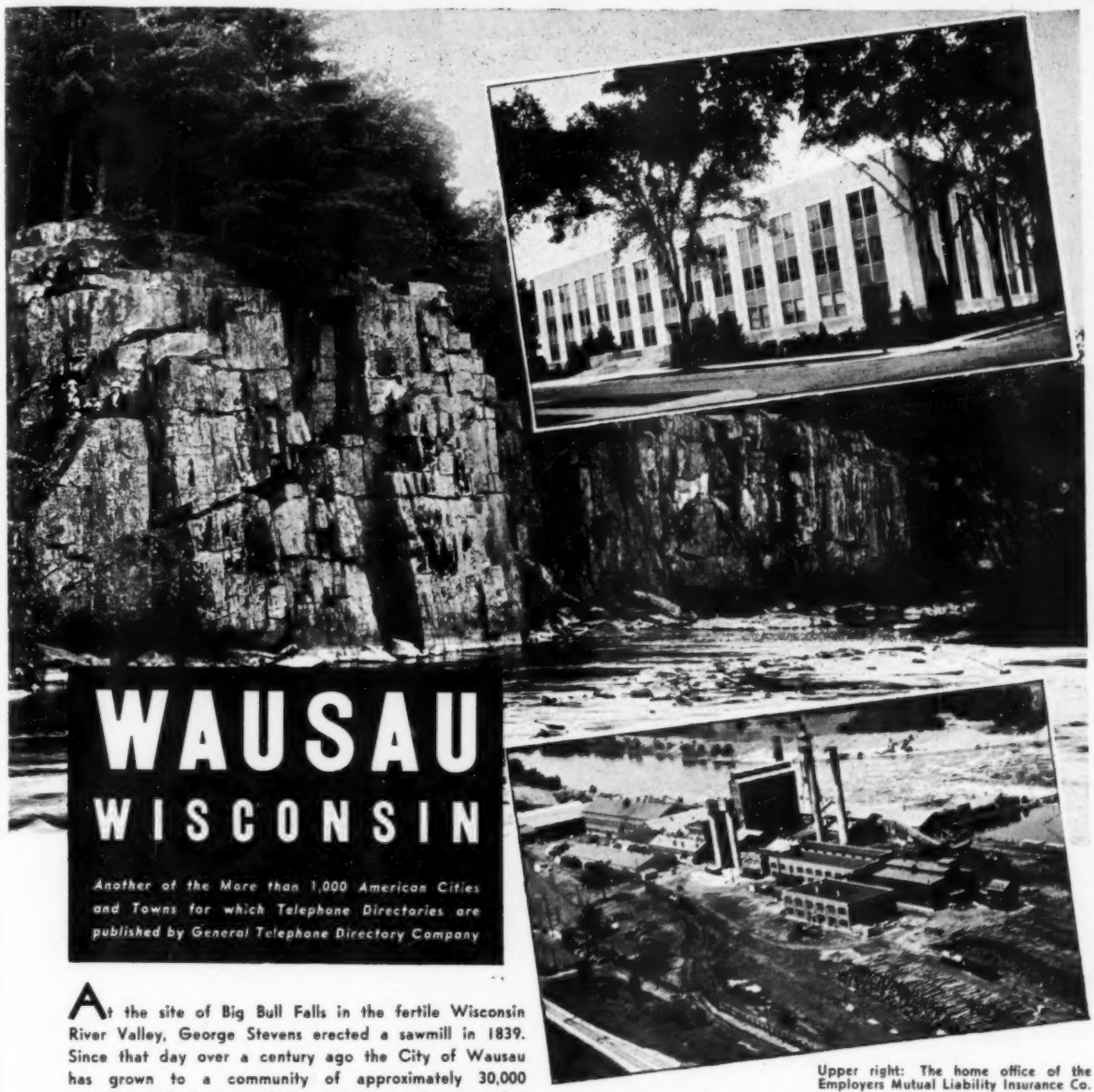
Assumes Managership

F. CONNER TUCKER recently became manager of the Western Light & Telephone Co. at Argonia, Kan.

V V

New Telephone Operator

MRS. MARIE MORSE on October 22 became resident telephone operator of the Coopersburg (Pa.) Telephone Co.



WAUSAU
WISCONSIN

Another of the More than 1,000 American Cities and Towns for which Telephone Directories are published by General Telephone Directory Company

At the site of Big Bull Falls in the fertile Wisconsin River Valley, George Stevens erected a sawmill in 1839. Since that day over a century ago the City of Wausau has grown to a community of approximately 30,000 people and the industry of the adjacent area has expanded proportionately.

Today Wausau is a center of varied business activity. It is the home of the Employers Mutual Liability Insurance Co., fourth largest underwriter of employer liability insurance in the world. Here, also, is located the Marathon Corporation's huge paper mill. Other industrial activities of the city include the manufacture of electric motors, batteries, shoes, aluminum, and machinery.

Nearby Rib Mountain State Park is a sports center in both winter and summer. People are drawn from all over the surrounding country in winter for skiing and in summer for boating and fishing.

In 1936 the Commonwealth Telephone Company, which serves Wausau, first employed the sales and publishing services of the General Telephone Directory Company for its telephone directories. During the intervening period, the advertising revenue of this Company from directory operations has been increased over 300%.

If you contemplate revisions in your own directory procedure we invite you to write for a copy of "Making More Money From Your Telephone Directory" — an interesting little book which explains fully the directory sales and publishing service offered by this organization.

Upper right: The home office of the Employers Mutual Liability Insurance Co.

Center: Photo of the Eau Claire Dells, one of Marathon County's noted recreational spots.

Lower right: The Marathon Corporation's huge paper mill.

GENERAL TELEPHONE DIRECTORY COMPANY

Eastern Office: Ben Hur Bldg., Crawfordsville, Indiana. Telephone 2270

Western Office: Press-Telegram Bldg., Long Beach 2, California. Telephone 672-22

Rural Service Featured
AT VIRGINIA CONVENTION

By H. D. FARGO, JR.
President, TELEPHONY

THE parade of state conventions, many of which had been suspended during the war, was resumed last month. More than 150 registered for the 11th annual Virginia Independent Telephone Association convention at Hotel Roanoke, Roanoke, Va., October 25 and 26.

The meeting opened at a luncheon presided over by President J. P. Borden, Charlottesville, Virginia Telephone & Telegraph Co., who greeted members and guests. Clyde S. Bailey, Washington, D. C., executive vice president of the United States Independent Telephone Association, spoke and in his usual capable manner, summarized the many problems facing the telephone business in the postwar period, including tax relief, rate increases and the Rural Telephone Administration bill. Concerning the latter, Mr. Bailey said, "The position which the national association has taken is that the industry is quite capable of dealing with the rural telephone problem without any help from a government bureau in Washington, when manpower and materials again are available."

W. C. Darrow, Tarboro, N. C., commercial and traffic manager, Carolina Telephone & Telegraph Co., chose the subject, "Building Up the Service." He listed the steps that should be taken by telephone companies to restore service to normal, such as training new employes, keeping abreast of technical developments and use of vision in planning for the future.

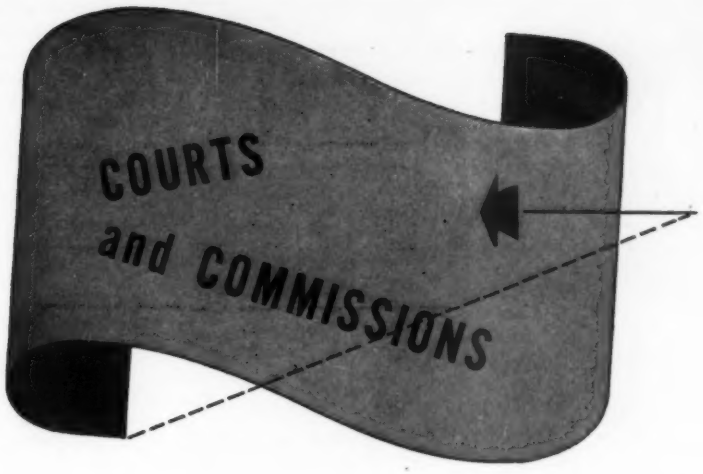
Following a test of the traffic I.Q. of many of those present, B. L. Fisher, Martinsville, president, Lee Telephone Co., addressed the convention on "Inter-Toll Dialing." The speaker asserted that the telephone industry is on the verge of a new era. He forecast that very little additional toll wire mileage would be built as carrier equipment and other means would be used to increase circuits with the present wire facilities. Constantly decreasing costs of providing long distance service was prophesied. Mr. Fisher stated he had spent 10 days with several engineers perfecting his inter-toll dialing plan. It has resulted in much faster connections, he said.

He then gave an actual demonstration of the system, dialing direct to Martinsville (60 miles distant from Roanoke) and then on to High Point, N. C. (120 miles away). Next, a call was dialed direct to High Point, where

(Please turn to page 42)

Officers of the Virginia Independent Telephone Association (left to right): VICE PRESIDENT W. J. HOLLOWAY, Smithfield; PRESIDENT STANLEY A. OWENS, Manassas; ASSISTANT SECRETARY-TREASURER ELIZABETH DULL, Harrisonburg; SECRETARY-TREASURER LLOYD C. PULLEY, Warsaw. SECOND VICE PRESIDENT W. A. PANKEY, Bluefield, W. Va., was not present for this picture.

Directors of the Virginia Independent Telephone Association (standing, left to right): E. B. FITZGERALD, Gretna; DR. GEORGE B. COOKE, Manassas; F. T. PRUFER, Staunton; KELLEY McNISH, Bristol, Tenn.; J. P. Borden, Charlottesville; W. C. DARROW, Tarboro, N. C.; (seated, left to right): W. J. HOLLOWAY, Smithfield; STANLEY A. OWENS, Manassas; LLOYD C. PULLEY, Warsaw; FRANK G. LaPRADE, Martinsville. Directors not present in picture are FRANK A. GOULD, Harrisonburg, and W. A. PANKEY, Bluefield, W. Va.



Telephone Call to Cost St. Louis Woman $1,000

A single telephone call, made any time up to October 25, 1946, will cost Mrs. Marie Willson of St. Louis, Mo., exactly $1,000.

This punishment was meted out October 25 by Judge David W. FitzGibbon of the Court of Criminal Correction No. 2, who ordered the removal of the instrument from Mrs. Willson's residence and a ban on her use of any outside telephone for that period of time.

Judge FitzGibbon upheld the fine of $100 each on 10 counts, which had been imposed upon Mrs. Willson September 24 by City Judge B. Catanzaro, for disturbing the peace of attorneys and tradesmen by directing abusive language toward them via telephone. He stayed the fine for a probationary period of a year, but warned that the probation would be revoked if the terms laid down were not observed.

V V

Michigan Bell Asks to Reopen Rate Cut Case

Arguments will be heard by the Michigan Public Service Commission at Detroit November 27 on a petition by the Michigan Bell Telephone Co. to reopen testimony in a rate case which was completed in July. (TELEPHONY, August 18, page 23.)

William J. McBrearty, commission chairman, explained that the case, involving possible reductions in future rates, is separate from another case in which the commission ordered $3,500,000 cut from rates for 1944. The company's appeal from that order is pending in the Michigan Supreme Court.

George M. Welch, president of the company, contended in the petition that conditions have changed with the end of the war since the testimony was completed, and that "findings on presently known facts can be nothing other than speculative."

A major factor in the case was avoidance of federal excess profits taxes through rate reductions. Mr. Welch noted that Congress now is considering a reduction in the tax. He also cited removal of wartime restrictions which will permit the company to proceed with an extensive construction program to meet demands that accumulated during the war. Construction costs have risen, he said, but the extent of the increase cannot be determined until the middle of 1946, when construction estimated to cost $14,000,000 will be completed.

Impending wage increases constitute another factor, Mr. Welch said, adding that "It would be unrealistic to suppose that telephone rates could be reduced in the face of such a general rising price trend."

V V

ICC Orders Improvements Upon Independents' Merger

The Illinois Consolidated Telephone Co., Mattoon, a consolidation of that company and the Midland Telephone Co., also of Mattoon, will spend approximately half a million dollars in the next two years in the rehabilitation and modernization of its plant and equipment under authority recently granted by the Illinois Commerce Commission.

The commission's order, in approving the consolidation of the two companies, provided excess funds shall be used to improve the plant and equipment, thereby providing better service to the telephone subscribers in the territory served.

In announcing adoption of the order Commission Chairman John D. Biggs said, "This action is in line with the commission's program of insuring the financial stability of the operating utilities under its jurisdiction and the obtainment of cash for improvements and additions."

V V

H. P. Huls Named to California Commission

Gov. Earl Warren on October 25 nominated Harold P. Huls, city attorney of Pasadena, to the California State Railroad Commission to fill the unexpired term of Richard Sachse, who resigned to accept a post on the Federal Power Commission. The term expires January 1, 1949.

Graduated from the University of Chicago Law School, Mr. Huls was admitted to practice in California in 1922 and has been Pasadena city attorney since 1929. He is past president of the city attorneys' section of the League of California Cities, a trustee of the National Institute of Municipal Law Officers and a past president of the City Attorneys Association of Southern California. He is a veteran of World War I.

The salaries of California railroad commissioners were increased this year by the state legislature from $8,000 to $10,000 a year.

V V

FCC Approves Radio-Telephone Installation at Boston

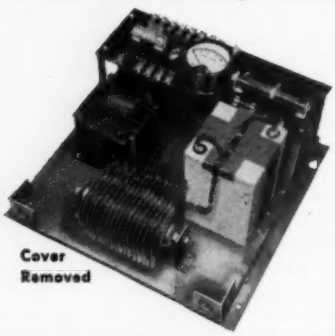
The New England Telephone & Telegraph Co. on October 24 was granted authority by the Federal Communications Commission to establish a radiotelephone station at Boston, Mass., and to equip 55 portable mobile radiotelephone stations in seven company trucks and 48 privately owned commercial vehicles.

This specifically is for experimenta-

STROMBERG-CARLSON
Recommends...

RAYTHEON RectiFilteRs
(Battery Eliminators)

Release Charging Cable Pairs For Revenue Producing Service



Cover Removed

Raytheon RectiFilteRs help you solve the problem of telephone cable shortages for PBX use.

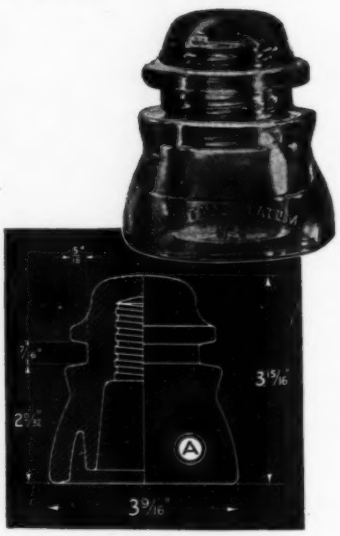
By converting A.C. current to stabilized D.C., RectiFilteRs eliminate storage batteries. This in turn releases cable pairs, required for carrying charging current to PBX boards, for additional revenue producing service. RectiFilteRs are efficient, compact and require no maintenance.

Here's what RectiFilteRs will do for you—

- Eliminate batteries and the expense of routine service.
- Provide stabilized D.C. output voltage from no load to full load.
- Minimize power costs because of high efficiency in converting A.C. to D.C.
- Save $30 to $90 a year.

RectiFilteRs have no moving parts . . . require no maintenance. Write for bulletin.

WIND! RAIN! STORM! They "Take It"



Durable, yes! ARMSTRONG'S "Whitall Tatum" Glass Insulators are precision-made, by automatic machinery, of materials that have undergone ***rigid*** chemical laboratory inspection. The insulators are regularly polariscope-inspected to insure the perfect product.

Outstanding features of ARMSTRONG'S "Whitall Tatum" Glass Insulators are:

- Crystal clarity, making them less visible — hence less liable to malicious breakage.
- True pin fit—insured by careful, accurate gaging of pin-cavity.
- Durable—these insulators, both under test and in actual use, have proved stronger than supporting pins.

Conform to or exceed A.S.T.M. standards

STROMBERG-CARLSON — PROGRESS IN TELEPHONY

STROMBERG-CARLSON COMPANY

Factory and General Offices: Rochester 3, New York, U.S.A.
Branch Offices: Chicago, Kansas City, San Francisco, Toronto

tion in the Greater Boston district, and company officials declared it is ready with plants and a staff, but must await actual equipment.

Besides the transmitting and receiving station, there will be several stations in strategic parts of the metropolitan area, it was stated, to amplify and relay conversations from the small automobile transmitting units to the telephone wire system.

The FCC said the New England company expects the proposed service later will be available also to ships operating in Boston Harbor, Massachusetts Bay, Cape Cod and nearby parts of the Atlantic Ocean, supplementing present service available through the coastal harbor stations.

V V

Chesapeake & Potomac Co. to Judge Service Applications

The Maryland Public Service Commission agreed October 25 to permit the Chesapeake & Potomac Telephone Co., Baltimore, to decide which applicants for special line service are qualified to receive it.

The commission explained it would not alter the telephone company's obligation to furnish private line facilities terminating in loudspeakers in public places, provided there was no evidence that the lines were to be used for "illegal purposes," meaning bookmaking operations.

The action, representing a modification of a seven-year-old commission order requiring the company to furnish private lines for clients of the World Wide News and Music Service, Inc., with respect to private places, followed a hearing on World Wide's complaint that the company had refused to grant facilities for six new subscribers.

During the hearing, Joseph M. Wyatt, counsel for World Wide, accused the telephone company of attempting to imply by "innuendo," that World Wide was being operated as a bookmaker's service.

V V

Dismisses Suit to Remove Extensions

An anti-extension complaint against the Chesapeake & Potomac Telephone Co. of West Virginia was dismissed October 24 by the Public Service Commission of West Virginia on request of the complainant, George D. Moore, statistician for the state mileage administration.

Mr. Moore, who told the commission that a telephone finally had been installed in his apartment, had sought the removal of extension telephones in homes, with a few essential exceptions,

in order that thousands of West Virginians without telephones could get service.

The company had contended that such procedures would lead to unending confusion and would not solve the present shortage.

V V

Seeks Special Listing for Multiple "A" Names

The contest for top directory billing has become a headache for the Southern California Telephone Co., Los Angeles, which October 21 petitioned the California Railroad Commission for permission to place company names of multiple A's in a special category at the bottom of the classified directory.

According to the telephone company's representative, "People even go into court to get their names changed to include a ridiculous number of A's. Then someone else does the same thing —then they start suing one another."

Most firms with the space hogging array of A's admitted they did it purely for a top spot in the telephone book, but William L. Carpenter of the Argonne Van & Storage Co., the No. 1 "A" man, with 25 A's for listing purposes, said it was his firm's legal name.

"That name is filed with the city recorder," he said, "in compliance with . . ." and he quoted a series of civil code numbers.

He threatened to sue the telephone company if the proposed plan goes through, and said that, furthermore, the firm name next year will have 26 A's.

V V

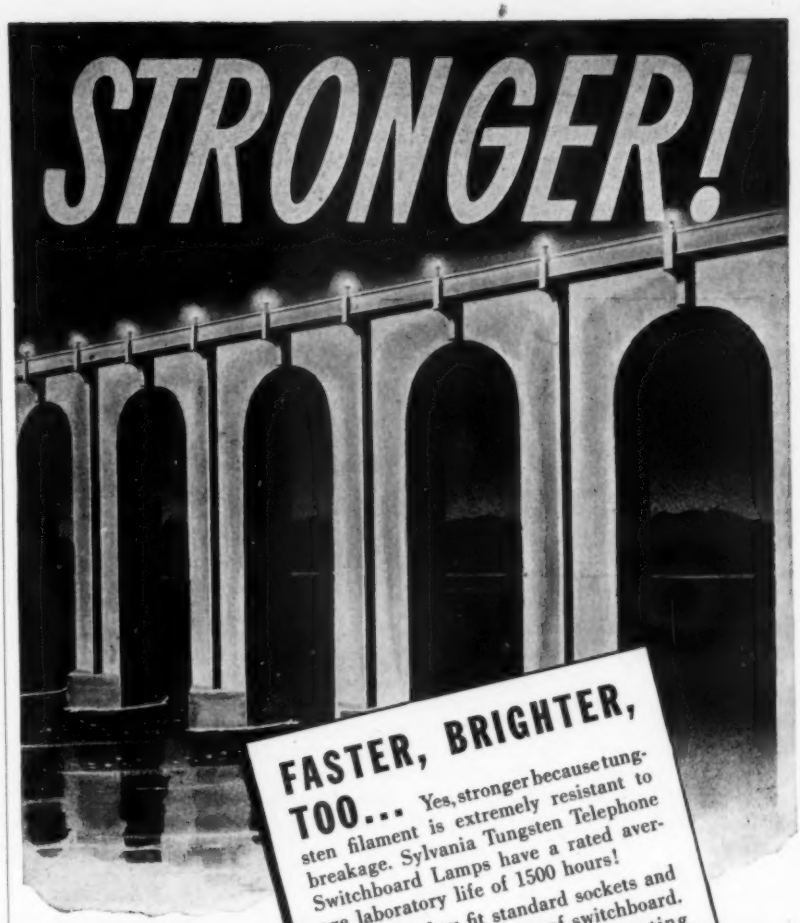
Indiana Independent Gets Rate Hike; Two More Heard

The Indiana Public Service Commission on October 11 granted rate increases to the Woodburn (Ind.) Home Telephone Co., following a hearing September 17. Former and new monthly rates follow:

Class of Service	*Former Rates*	*New Rates*
Single line, business, town, common battery	$2.50	$3.00
Single line, residence, town, common battery	1.75	2.25
Two-party line residence, town, common battery	...	2.00
Party line, business, rural, magneto	1.75	2.00
Party line, residence, rural, magneto	1.50	1.75

Rural party lines are limited to 10 parties per line and rates are to become effective when and if facilities can be installed to permit this limit.

The commission on November 2 at Indianapolis heard the petition of the Bremen (Ind.) Telephone Corp., and on November 6 at Crawfordsville, the request of the Darlington (Ind.) Tele-



FASTER, BRIGHTER, TOO... Yes, stronger because tungsten filament is extremely resistant to breakage. Sylvania Tungsten Telephone Switchboard Lamps have a rated average laboratory life of 1500 hours! Of course, they fit standard sockets and can be used in any type of switchboard. Accurate manufacturing and testing methods assure tight, correctly formed bases . . . close tolerances are maintained to prevent sticking in sockets. They're *faster*, too,—tungsten lights up quicker than any other type of filament . . . they're *brighter*, because this filament is mounted near the end of the bulb for maximum end-on illumination. Available now in clear. Natural ruby and natural green will be available soon.

SYLVANIA ELECTRIC

SALEM, MASSACHUSETTS

MAKERS OF FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

phone Co. for rate boosts. The Bremen company, in addition, asked authority to issue securities for financing the installation of full dial equipment and other plant improvements.

V V

Wisconsin Independent to Get New Equipment

The Wisconsin Public Service Commission recently authorized the Fennimore (Wis.) Telephone Co. to install a new common battery type switchboard and instruments at a cost not to exceed $8,500.

The order pointed out that the present magneto type switchboard at the exchange is "in a bad state of repair." Construction of the new switchboard may not proceed until after nine months, according to the order.

V V

FCC Hears Protests On Special Tariff Filing

On November 1, the Federal Communications Commission held informal hearings on a staff suggestion that the Bell System file tariffs for all contract services involving the use of Bell equipment or facilities.

Protest had been made that such an interpretation of Section 203 of the Communications Act would place on public notice arrangements which the Bell companies might have with Independent connecting carriers and other non-Bell communication companies, thereby implying that such special service arrangements were available on similar terms to organizations not now established in the communications field.

The FCC, represented by Commissioners Walker, Wakefield and Durr, took the matter under advisement and is expected to issue an early interpretation of Section 203 requirements in this respect.

V V

Alabama Company Buys Extensive Telephone Properties

J. L. Kirk, Anna M. Kirk, J. E. Kirk, C. E. Kirk, E. E. Kirk and Mrs. Marie Ferguson and associates recently purchased the Standard Telephone & Telegraph Co. of Dothan, Ala., and the Andalusia (Ala.) Telephone Co. The purchasers took possession October 31.

The Alabama Public Service Commission approved the sale of this property, which has more than 8,700 telephones and 3,250 toll circuit miles, October 23. The consideration of the sale was $1,500,000. Practically all the personnel was retained and G. R. McKelvy remains as manager for the Kirk system. Members of the Kirk family occupy official positions.

Properties involved were described by commission officials as second in extent and value in Alabama to those of the Southern Bell Telephone & Telegraph Co.

V V

Independent Loses Plea for Long Distance Circuit

The Indiana Public Service Commission, in an order dated October 4, dismissed the petition of the Arlington (Ind.) Telephone Co. and its patrons to require the Indiana Bell Telephone Co. to provide a separate circuit for the long distance business of the company.

Evidence submitted at the hearing held in September disclosed the toll lines of the Indiana Bell are connected to the facilities of the Arlington company by a circuit owned by the Bell company; that the toll business carried over such circuit is operated by the Citizens Independent Telephone Co. at Rushville (the toll center); that the message capacity of the circuit is more than adequate to handle all long distance business originating at Arlington and destined for points beyond the Rushville toll center and also that the capacity of the circuit is more than adequate to handle all calls originating beyond the toll center at Rushville and terminating at Arlington.

Following introduction of the evidence, the Bell company moved for a dismissal of the petition on the grounds that the commission was without jurisdiction to grant the requested transfer to the termination of the Bell company's toll connection with Arlington Telephone Co. from the toll center at Rushville to the toll center at Indianapolis.

The commission sustained this motion.

V V

Nebraska Independent to Stop Time Telling Service

The Bassett-Springview Telephone Co., Bassett, has been authorized by the Nebraska State Railway Commission to eliminate tele-timer service from its schedule, along with the rate made therefor. (TELEPHONY, October 6, page 22.)

The company has been the only one in the state that sought to use this device which, the commission said, apparently has proved unsatisfactory.

V V

Seeks Rate Increase

The Womer-Inavale Telephone Co., Inavale, Neb., which operates a switching service between that town, and Womer, Kan., has asked the Nebraska State Railway Commission for authority to increase its charge from 75 cents to $1.00 a month, stating that the present rate is unremunerative.

MAKE SAFETY SIMPLE FOR INEXPERIENCED MEN

Give them BUCKINGHAM Equipment for safety, efficiency and physical comfort. They will be able to do more work — better work.

BUCKINGHAM Safety Equipment is used regularly by leading Utilities and by the U. S. A. Signal Corps. It stands up under the most exacting conditions.

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OF BINGHAMTON

W. H. BUCKINGHAM MANUFACTURING CO., BINGHAMTON 6, N. Y., U. S. A.

Graybar Makes Two New Appointments

The Graybar Electric Co., Inc., New York, N. Y., has announced the appointment of Donald R. Edge, effective November 1, as assistant rural lines sales manager, with headquarters in Chicago, and also announced the appointment of Edwin Black as assistant to the vice president, E. W. Cashman, at general headquarters in New York City.

Mr. Edge has been connected with Rural Electrification Administration activities since 1936, having managed the Union Rural Electric Cooperative in Marysville, Ohio, which he left to organize, and later manage, the Central Electric Cooperative, Inc., at Parkers Landing, Pa.

Mr. Black, who recently returned from service with the Army Air Forces, began his career with the Graybar company more than 25 years ago in Pittsburgh, Pa. Since that time he has held the position of service supervisor in both Youngstown, Ohio, and Flint, Mich., and service manager in Detroit, Mich. Prior to his entry into the Army, he was located in the company's Chicago office.

V V

Syntron Makes Improvements On Gasoline Hammer

The Syntron Co., Homer City, Pa., announces an improvement in the design of the tool retaining arrangement of its self-contained, portable gasoline hammer paving breaker.

The nose-end arrangement has been redesigned to utilize the resiliency of a spring-tool retaining clip.

This eliminates the solid latch mechanism previously employed and commonly used in this type of demolition hammer for retaining the tool in the hammer, it is said.

The company states that the advantages of the resilient spring clip arrangement are threefold:

(1) Provides easy spring action of the tool, itself, when used at maximum over-travel.

(2) Provides a quicker and easier method of changing tools used in the hammer.

(3) Eliminates broken retainer latches, nose castings, etc., because of a lack of resiliency in the retaining arrangement.

Additional information about these gas hammer paving breakers—the tools to be used with them—and the various uses to which they can be put — is available from the company upon request.

KLEINS

CHOICE OF MEN WHO *KNOW*...

Good Tools!

Here are two sturdy tools — back from the war — ready to aid linemen and electricians with their peacetime job.

Some will choose the husky 201, favorite of "men who know good tools" for generations. Others will prefer the streamlined 201-NE with the rounded nose that gets into confined spaces and won't nick wires.

But whichever Klein they select, they are sure of getting the maximum in tool life—tool comfort—tool quality.

Klein Pliers are being made as rapidly as we can produce them, but naturally it will take some time before everyone can be supplied. Place your order with your jobber and he will fill it as soon as he can.

ASK YOUR SUPPLIER

Foreign Distributor: International Standard Electric Corp., New York

This book on the care and safe use of tools will be sent on request.

KLEIN TOOLS EST. 1857

Since 1857

Mathias KLEIN & Sons

Established 1857 — Chicago, Ill., U.S.A.

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HABIRSHAW

No. 17 Bronze Drop Wire

Distributed Exclusively by
STROMBERG-CARLSON

High strength bronze conductor . . . expertly blended synthetic rubber insulation . . . soft, unbleached cotton braid, thoroughly saturated to provide a long-lived moisture-resisting covering.

A Quality Product Made by

Phelps Dodge Copper Products Corporation

Habirshaw Cable and Wire Division

ELECTROX AUTOMATIC

BATTERY CHARGER TYPE RB

Manufactured by
SCHAUER MACHINE CO.

Keeps Batteries in Peak Condition At All Times.

- Completely Automatic.
- Floats Across the Battery.
- Noiseless. No A.C. Hum. No Interference.
- Trouble-free. Requires No Routine Adjustment. No Bulbs. No Relays. No Vibrators. No Moving Parts.

Capacities of 1 to 12 amperes, from 24 to 48 volts. Other capacities available to meet individual requirements.

Low First Cost ● Low Operating Cost ● Dependable Service ● Long Life.

Write for Circular 443

STROMBERG PROGRESS IN TELEPHONY CARLSON

STROMBERG-CARLSON COMPANY

Factory and General Offices: Rochester 3, New York, U.S.A.
Branch Offices: Chicago, Kansas City, San Francisco, Toronto

Rural Service Featured

(Continued from page 32)

the voice travelled over a physical circuit Roanoke to Martinsville, and over carrier from there to High Point. There is only a slight transmission loss but it increases depending upon the number of exchanges through which the call passes. Mr. Fisher described his company's inter-toll dialing system in an article in the August 28, 1943, issue of TELEPHONY.

Three maps of the state of Virginia were displayed, showing telephone development by counties. One showed the number of potential telephone users in proportion to the area to be served. A second map gave county facts: Number of farms with annual incomes of over $400; number of farms with telephones in 1930, and number of farms with telephones in 1940. The third map specified the number of farms with an annual income of over $400 without telephones in 1940 by counties. These maps were prepared by Capper Publications, Inc., and can be made up for other states.

"Rural and Farm Telephone Development" was the title of an address by Arthur W. Harrison, general commercial manager, Chesapeake & Potomac Telephone Co. In commenting on the Rural Telephone Administration bill, Mr. Harrison pointed out that rural telephone development had been well under way prior to the war; and that the industry, by aggressive action, has increased the number of telephones on farms by 35 per cent since the depression low point.

"The Bell System plans to extend service to another million rural homes within three to five years after men and material are available, leaving for future development less than one-third of the farms in the Bell territory. I understand that the Independent industry has plans which, in the over-all, run somewhat parallel to the Bell program," the speaker said.

Mr. Harrison further stated, "While the number of farms in Virginia decreased from 197,632 in 1935 to 174,885 in 1940, there was a net increase of 3,500 rural subscribers, and, further, that from 1940 to 1945, an additional increase in rural telephones was realized. The percentage increase in rural telephones has been slightly higher since 1935 than the gain in urban telephones."

Mr. Harrison's speech will be printed in full in a future issue of TELEPHONY.

L. X. Blantz, general construction supervisor, and G. A. Pullen, plant supervisor, Chesapeake & Potomac Telephone Co., gave a highly instructive demonstration of the effects of lightning on telephone wires by use of a display board. The importance of adequate protective equipment was clearly shown, also the necessity of good grounds. For the latter purpose, water pipes are considered best unless ground rods are driven deep enough to be in damp soil even when dry weather prevails.

After the banquet the second evening, an address was delivered by Francis X. Welch, Washington, D. C., managing editor, *Public Utilities Fortnightly*, and Washington editor of TELEPHONY. Mr. Welch's address was published in the November 3 issue of TELEPHONY.

Officers elected were: President, Stanley A. Owens, Manassas, Tri-County Telephone Co.; first vice president, W. J. Holloway, Smithfield, Home Telephone Co.; second vice president, W. A. Pankey, Bluefield (W. Va.) Telephone Co.; secretary-treasurer, Lloyd C. Pulley, Warsaw, Tidewater Telephone Co.; assistant secretary-treasurer, Elizabeth Dull, Harrisonburg (Va.) Telephone Co.

The board of directors include the following: E. B. Fitzgerald, Gretna, Peoples Mutual Telephone Co.; Dr. George B. Cooke, Manassas; F. T. Prufer, Staunton, Clifton Forge-Waynesboro Telephone Co.; Kelley McNish, Bristol, Inter-Mountain Telephone Co.; Mr. Borden; Mr. Darrow; Mr. Holloway; Mr. Owens; Mr. Pulley; Frank G. LaPrade, Martinsville, Lee Telephone Co.; Frank A. Gould, Harrisonburg (Va.) Telephone Co., and Mr. Pankey.

V V

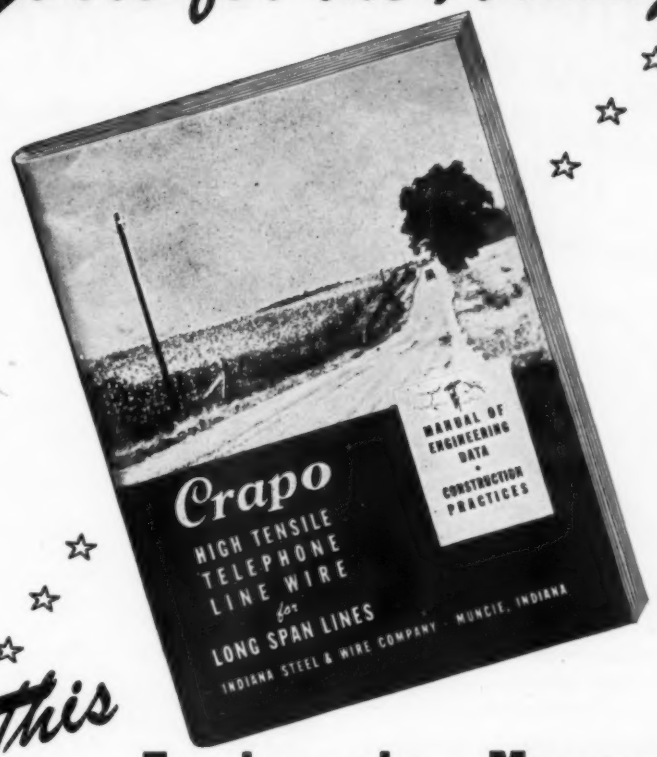
Plans to Nationalize British Cable and Wireless

The labor government announced in the House of Commons, London, on November 1 a sweeping plan to nationalize British aviation and the vast network of British Empire cable and wireless communications.

In regard to communications, the program calls for the acquisition of the stock of the vast Cable & Wireless, Ltd., totaling $120,000,000 and held by 75,000 shareholders.

It is understood that Cable & Wireless, Ltd., said it would fight the plan to take over cable and radio facilities as impracticable, unworkable, dangerous to foreign concessions and against the public interest.

Yours for the Asking



This New **Engineering Manual for Long-Span Lines**

Pertinent and timely information on how to build long-span, low-cost rural lines of *Crapo* High-Tensile Telephone Line Wire is contained in this new, illustrated Manual. The book is designed especially to assist operating companies in furthering their plans for extending and improving rural service.

The contents include electrical and physical characteristics of both *Crapo* HTL-135 and *Crapo* HTL-85 Line Wire; tables of stringing sags and tensions; recommended construction practices; information on guying, metalicizing and transposition, river crossings, etc.

If you have not received a copy of this manual, be sure to ask for one! Direct your inquiry to your distributor of *Crapo* Galvanized Telephone Wire and Strand, or write us!

Crapo HTL-135 Telephone Line Wire possesses two and one-half times the strength of standard B. B. wire; makes practicable spans of 350 feet in heavy loading to 500 feet in light loading districts. *Crapo* HTL-85 permits spans of 225 feet in heavy loading, 375 feet in light loading districts.

INDIANA STEEL & WIRE COMPANY
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THE FAST, EASY WAY OF MAKING TAP-OFF CONNECTIONS

● Here's a new Nicopress Sleeve that materially increases efficiency in making tap-off connections.

Nico-Taps meet every requirement for this type of work. Completed connections are strong, tight and efficient. And besides, Nico-Taps are real time savers. They are split, thus eliminating all need of cutting the line wire to make the connection. All you do is slip the sleeve over the wire and compress with your Nicopress Tool.

Nico-Taps are now available in three sizes; one for tap-offs from 17 or 18 B&S to 17 or 18 B&S (Stock No. T2-045B), one from 12 B.W.G. to 12 B.W.G. (Stock No. T2-109D), and one, a reducing sleeve, from 12 B.W.G. to 17 or 18 B&S (Stock No. T2-109x045D).

BUCKEYE
TELEPHONE & SUPPLY CO.
COLUMBUS, OHIO

The Operator's Corner

By MAYME WORKMAN
TELEPHONY's Traffic Editor

PEOPLE, especially women, often are disturbed by the thought of growing old. Operators, with many years of faithful service, have asked the writer, "Do you think the company is planning on letting me go because of my age?" or "Do you think I am too old to work?"

Age is not entirely a matter of years. Age is the answer to your feelings. Years give us birthdays, but the heart never is old until it no longer harbors the hope of living.

We are old when our thirst for knowledge is satisfied and our hunger to help humanity is appeased.

A person of 50 who has lived wisely and has kept in touch with the spirit of the times is at her best. To bodily vigor she joins experience, and experience means good judgment. To judgment join a sense of responsibility and a habit of steadiness, and you have qualities of inestimable value in the central office or in any line of business.

You are as old as your doubts about doing things and as young as your faith that you will do these things. We live in deeds, not in doubts—in action, not in age.

Age may mean stronger glasses, stiff joints and a desire to think more and tramp less, but if you can keep the wrinkles in your face from extending down to your heart, you are safe.

The incurable disease is to decide that you are old in years. The day you make this decision, you are on the downward trend.

The enthusiasm of youth combined with the experience of age is a winning combination. We need this combination in our operating rooms.

"How Old Are You?"

Age is a quality of mind;
If you have left your dreams behind,
If hope is cold;
If you no longer look ahead,
If your ambitions' fires are dead—
Then you are old.

But if from life you take the best,
And if in life you keep the jest,
If love you hold;
No matter how the years go by,
No matter how the birthdays fly—
You are not old.

Selected—

Questions from Illinois Operators

(1) What action should be taken after leaving an NC or BY call order and being told to hold the circuit?

(2) What action should be taken if an operator records a priority or other urgent call in an office where recording is done away from the switchboard at a table or turret?

(3) What is an "AG" request?

(4) Is it ever necessary to dismiss the calling party at the completion of recording his call?

(5) How can an operator avoid unnecessary verification of the details of a long distance call?

Answers to these traffic questions are presented on page 52.

V V

Peninsular Company Names Traffic Superintendent

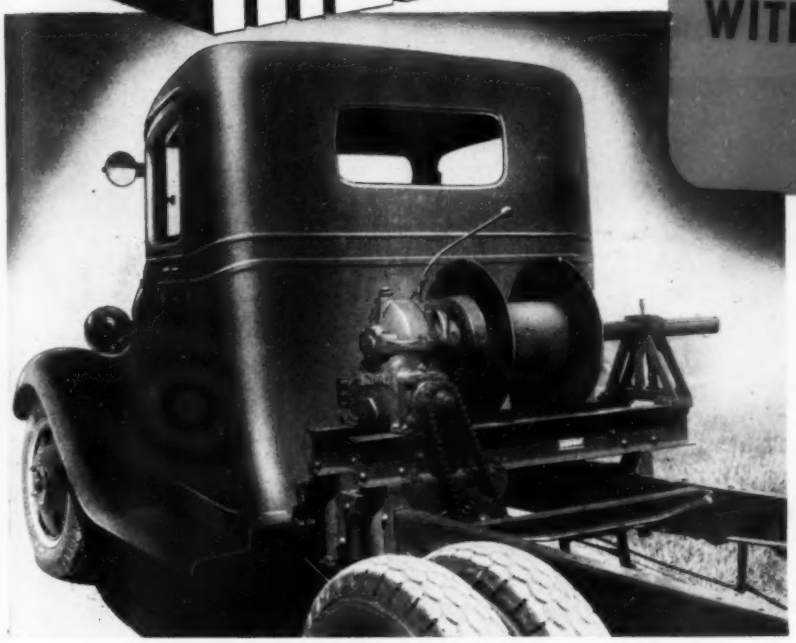
George W. Rose, for the last 3½ years traffic supervisor of the Carolina Telephone & Telegraph Co., Tarboro, N. C., recently was named traffic superintendent of the Peninsular Telephone Co., Tampa, Fla., succeeding Harry E. Nott who has been made tax representative of the Peninsular company.

Mr. Rose entered the employ of the Home Telephone Co. (now the Carolina Telephone & Telegraph Co.) in 1925, working at Tarboro, N. C., as addressograph and revenue accounting clerk. On October 1, 1928, he joined the Central Carolina Telephone Co. at Siler City, N. C., as accounting and plant clerk. He transferred to Erie, Pa., on September 15, 1933, and worked as staff assistant in the traffic department of the eastern group of the Associated Telephone Utilities. On July 1, 1935, he transferred back to the Central Carolina company at Southern Pines as commercial supervisor. Two years later when the Investors Telephone Co. had acquired the Central Carolina company, Mr. Rose was transferred to Newton, Iowa, as general traffic superintendent of all operating companies. In May, 1942, he resigned from the Investors system and returned to Tarboro to rejoin the Carolina Telephone & Telegraph Co. as traffic supervisor.

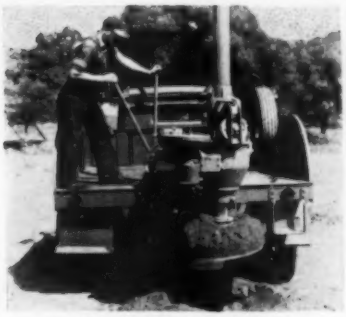
Mr. Nott has had 40 years of tele-

HIGHWAY

TOP PERFORMANCE WITH MAXIMUM *Safety*



Model L-12-C Winch

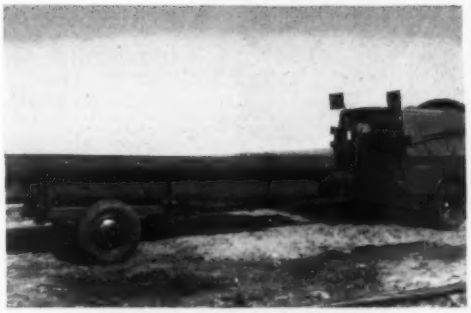


Model HD Boring Machine

Model LCW-102 Body

Highway winches are built to do their job easily, safely and efficiently. The single drum winch shown is made of electric cast steel and is used with middle type pole derricks. It is a small, free drum type, with ample strength for heavy-duty truck operation, yet its light weight permits use with 1½ and 2 ton chassis. Far from ordinary . . . it is tops in winches of this type.

Highway also offers efficient Propeller Shaft Power takeoffs as well as the easily installed "Transmission Type". Highway winches and power takeoffs are specifically designed for public utility work.



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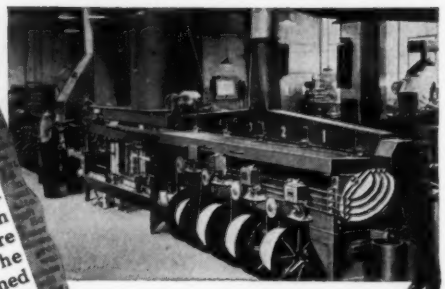
DROP Wire

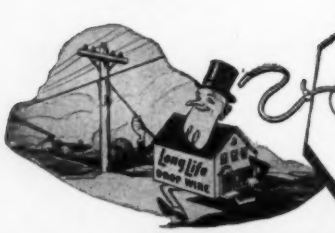
NEW CONTINUOUS WEATHERPROOFING LENGTHENS LIFE OF "WB" DROP WIRE

Whitney Blake Long Life Drop Wire now is weatherproofed by a process which makes the braid even more durable than before. The Buna-rubber-insulated, tinned conductor is covered with a heavy, long-staple cotton braid — which is impregnated thoroughly with asphalt and then coated successively with stearine pitch, mica, and anti-stick in one continuous operation. The Buna insulation exceeds pre-war rubber insulation in tensile strength, adhesion, and compression resistance.



Whitney Blake Long Life Drop Wire is distributed via Graybar exclusively. Graybar also offers top-grade galvanized wire, lead-covered cable, hardware, and all the other items you need for line construction and maintenance. A Graybar Man near you is ready to make your electrical requirements his personal responsibility. Take advantage of his time-saving assistance.

Graybar Electric Company, Graybar Building, New York 17, N. Y. 4519



Via GraybaR
First Source of Telephone Supplies

IN OVER 80 PRINCIPAL CITIES

GEORGE W. ROSE

phone experience, 20 of which have been with the Peninsular Telephone Co. He joined that company from the North Electric Manufacturing Co., Galion, Ohio, and prior to his employment there had spent 17 years in various phases of telephone work with the Niagara County Home Telephone Co., United Telephone Co. and the Stromberg-Carlson Telephone Manufacturing Co.

V V

"Mechanize or Perish" Is Reply to New Wage Rate

Washington Independents must either "mechanize or perish," if the newly proposed 75-cent minimum wage for women goes into effect in that state. Such is the opinion of Leslie A. Gritten, secretary-treasurer of the Oregon Independent Telephone Association, in that organization's publication, *News and Views.*

If this wage proposal by the Labor & Industries Department at Olympia, Wash., hard on the heels of the Pepper Bill's 65-70-75-cent scale, goes through, Mr. Gritten sees no alternative but the elimination of operators and the installation of dial switching, since a 75-cent minimum wage could not be met by existing revenues, and adequate rate increases would be so high as to bring forth a "public uproar."

V V

Another Missouri Independent Added to Middle States

The Middle States Utilities Co. of Missouri, Plattsburg, actively has taken over the Braymer (Mo.) Telephone Co., making another in its chain of Missouri-Iowa ownership of utilities. Nearby properties of this company are at Kingston, Cameron and Hamilton.

The Braymer exchange was known for many years as the Dorsey Telephone Co.

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The Kearney Drop Wire Clips grip the drop wire over the entire length of the clip, thus avoiding spot loading. It encloses the wire within its two sides so that the drop wire can never become disengaged from the clip.

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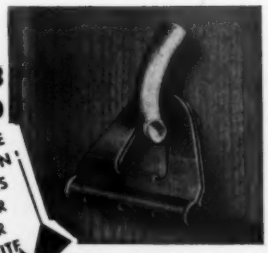

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ABC of the TELEPHONE

(Continued from page 15)

irritating clicks in the receiver of the operator's set.

The supervisory relays must operate when the talking circuit to the subscriber's telephone is completed. To provide this feature, the relays are connected in the talking circuit. It is quite important that supervisory relays be provided with a "talk through" feature. For this reason, all of the relays used in supervisory circuits have non-inductive "talk through" windings placed on the core in parallel with the inductive winding.

Operation of the supervisory relay places a resistance in parallel with the supervisory lamp. As illustrated in *Fig. 5*, the parallel or shunt resistance is 40 ohms. With the resistance in the circuit, the lamp is "shunted down." This action can be determined by a practical application of Ohm's law. Assume that the called party has not answered and the supervisory lamp is lighted and that the supervisory relay is in a normal position. The total resistance in the supervisory circuit is a total of the resistance in series, or 233 ohms. Using Ohm's law: 24 volts divided by 233 ohms equals .103 amp. This current value causes the lamp to glow through the opal of the lamp cap. When the called party answers, the supervisory relay operates to place 40 ohms resistance in parallel with the lamp. The only change in the original circuit is the addition of a parallel path around the lamp. The combined resistance of the lamp and shunt in parallel is 30 ohms. The total circuit resistance becomes 143 ohms when the supervisory relay is operated. Again, using Ohm's law, 24 volts divided by 143 ohms equals .168 amp. of current flowing in the circuit. It will be noted that more current flows in the circuit after operation of the supervisory relay than when the relay is in a normal position.

Before the shunt is placed in parallel, the voltage drop across the lamp is 12.36 volts. The rule to determine the voltage drop across any portion of a given circuit is to multiply the total current flowing in the circuit by the resistance of the particular portion. The formula is: $E = IxR$.

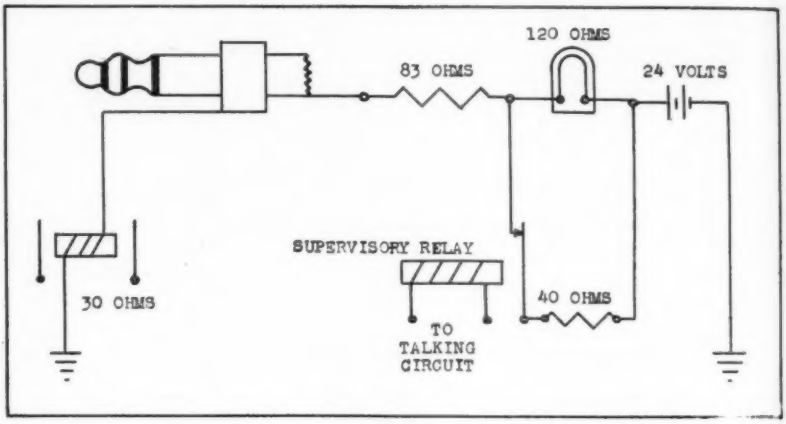
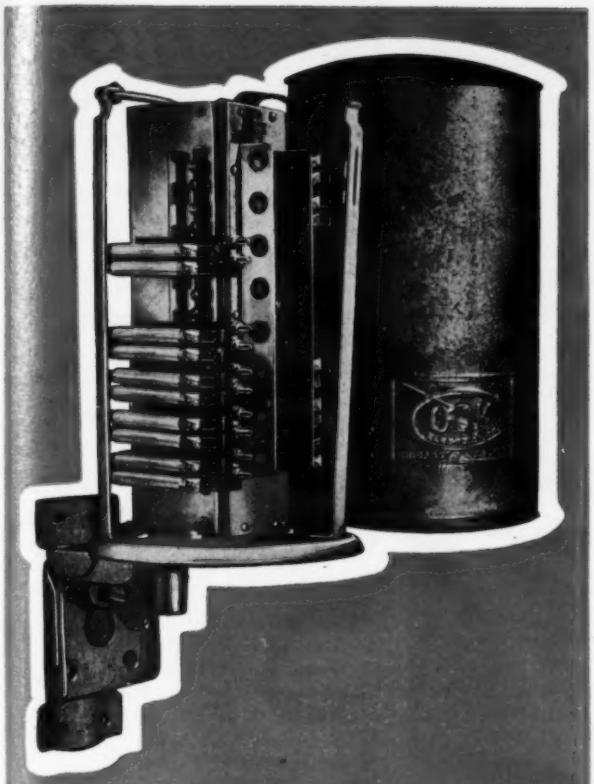


FIG. 5.

It can be explained further that in order to find the current in any one of a number of parallel resistances, first, determine the voltage drop across the entire combined group. Then, knowing the resistance of the particular branch, use Ohm's law $\frac{E}{R}$ to determine the current in that branch. In the above example, the combined resistance was found to be 30 ohms. Multiply the total current flow, .168 amp. by 30 ohms, and the voltage drop across the two resistances in parallel is found to be 5.04 volts. Current through the lamp is 5.04 volts divided by 120 ohms which equals .042 amp. Although more current is flowing in the supervisory circuit, it has been proved that less than half the original current is flowing through the lamp. The lamp will be heated to a dull red glow that is visible only if the lamp cap is removed. Since the signal is not visible through the opal of the lamp cap, the lamp is considered extinguished for all practical purposes. However, since the filament of the lamp is heated during all of the time the cord is on connection, it will glow to visibility immediately when the subscriber disconnects.

The importance of this immediate



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THE POLE CABLE TERMINAL FEATURING THE MAXIMUM IN

- **ECONOMY**
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IN INSTALLATION, SERVICING AND MAINTENANCE.

The Type S-20 Pole Cable Terminal and Protector Mounting is in wide use as a combined protected and unprotected all steel cable terminal. As part of the Trans-Mount System, the S-20 offers maximum economy because Type H Protector Mounts may be installed as required.

The self-soldering nozzle of the S-20 is located close to the pole to bring the cable behind the subscribers' drops. The mounting base is open at the back adjacent to the pole to prevent accumulations of ice, dirt or moisture. A separate mounting bracket shaped to fit the pole provides easy installation without gaining the pole. Drop wires enter the terminal through individual insulating knockout holes.

Every possible feature of convenience and accessibility for installation, servicing and maintenance has been carefully engineered in designing the S-20. All connections are at the front, the self-soldering nozzle lies close to the pole, a strong guide holds the hood securely in raised position for working ease, and drops are taken out through knockout in an insulating plate to prevent the entrance of birds, insects, dust, etc.

The TRANS-MOUNT SYSTEM

The S-20 Pole Cable Terminal is part of the Cook Trans-Mount System of Protection and Distribution. The Trans-Mount System is composed of the Type S-20 Pole Cable Terminal, the Type R Sub-Station Protector, the Type T Main Distributing Frame, the Type U Utility Sub-Station Protector, the Type UA-20 Aerial to Underground Terminal and the Type IT-20 and Type TN-20 Interior Cable Terminal Vaults, all using the Type H Protector Unit.

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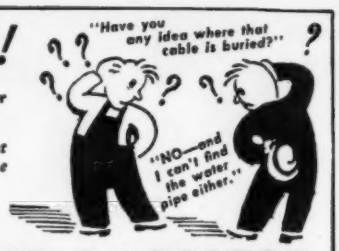
NOW you can have the well-known Stewart Cable Tester with many new advantages (see below) *combined in one instrument.*



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Tells exactly where cable or pipe is buried, and its correct depth. You are familiar with the dependable service of the Stewart in locating shorts, crosses, grounds, wet spots, etc. See *what this new instrument does!* Engineered to utmost accuracy. Light, rugged, built to withstand all kinds of weather and use.

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- Finds old cable or pipe when records have been lost.
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response to a disconnect is apparent when a subscriber flashes to recall the operator. If the switchhook is operated slowly, the supervisory relay will release and remove the shunt across the lamp. When the flashing is attempted by rapid operation of the switchhook, as would be encountered by hurried tapping of the hook with the finger, the supervisory relay will not return to normal, but, instead, will hold up.

V V

Texas Association Holds District Meeting

The first of the Texas Telephone Association's one-day district meetings was held at Lufkin, October 25, under the auspices of the Lufkin (Tex.) Telephone Co. of which Jean Shotwell is manager.

The following telephone and manufacturing companies were represented:

Lufkin (Tex.) Telephone Co.; Two States Telephone Co., Texarkana; Three States Telephone Co. of Texas, Corsicana; Gulf States Telephone Co., Tyler; Conroe (Tex.) Telephone Co.; Southwestern Bell Telephone Co., with headquarters at St. Louis, Mo.; Mid-West States Telephone Co., Prescott; Teneha (Tex.) Telephone Co; Alto (Tex.) Telephone Co.; Livingston (Tex.) Telephone Co.; Automatic Electric Sales Co., and Kellogg Switchboard Supply Co.

The telephone companies' representatives all were from exchanges located within a 100-mile radius of Lufkin.

Mr. Shotwell made a short welcome speech and, at his request, Oscar Burton, president of the association, presided at the meeting, giving some timely remarks on the over-all picture of the association's activities and telephone problems. Acting Secretary Gertrude Tucker, speaking briefly on membership in the association, extended an invitation to member and non-member companies and individuals to visit the headquarters office in Austin and offered all possible assistance to telephone people.

Morris Burton of the Gulf States Telephone Co. spoke on "Telephone Service as of Today and into the Future." It was a comprehensive talk dealing with traffic, commercial, plant and other problems in the telephone field, as well as the tremendous problems faced during the war and the new ones of the postwar period. The meeting was thrown open for discussion of various questions or observations from the group.

L. E. Limerhirt, Mid-West States Telephone Co., brought up the subject of rural telephone problems, with particular emphasis on how various companies are working out the situation

in their corresponding sections. W. E. Bynum of the Alto Telephone Co. commented on some of the difficulties he had met and overcome in his particular rural section of the country. Many chief operators from the various exchanges were present, and they were given an opportunity to discuss some of the problems arising out of their phase of telephone work.

The meeting adjourned with a barbecue luncheon served at the city park by the host. A short business session followed the luncheon.

V V

Kern and Campbell Elected Rochester Vice Presidents

Election of two members of the staff of the Rochester (N. Y.) Telephone Corp. as vice presidents was announced October 26 by John P. Boylan, president. They are William A. Kern, traffic superintendent of the corporation, and Donald H. Campbell, plant superintendent.

Mr. Kern, a native of Buffalo, joined the company in May, 1936, after leaving the New York (N. Y.) Telephone Co. of which he had been toll traffic superintendent in charge of the Rochester long distance office.

Mr. Campbell was born in Rochester and started in the telephone business with the Rochester Telephone Corp. as an installer's helper in October, 1911. After several promotions, he was made district plant superintendent in 1934, superintendent of maintenance in 1939 and plant superintendent on May 1, 1944.

W. A. KERN

D. H. CAMPBELL

Former Operators' Son Buys Missouri Independent

Elwood Williams of Freeport, Tex., November 3 took over the ownership and management of the Oregon Farmers Mutual Telephone Co., Oregon, Mo.

Mr. Williams is a son of Mr. and Mrs. Claude Williams of Oregon, who operated the telephone exchange for 25 years before it was sold a year ago to Mr. and Mrs. G. D. Humphries of Neighborville, Ill.

FUNDAMENTALS OF TELEPHONY

By ARTHUR LEMUEL ALBERT

Professor of Communication Engineering, Oregon State College

374 pages, 5½ x 8½, 200 illustrations, $3.25

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8. Manual Telephone Systems
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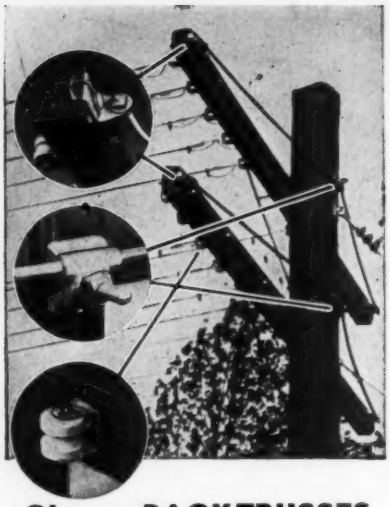

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Gwynne Bill Makes Progress; Senate Action Expected

The House Rules Committee on November 2 voted to report out the Gwynne Bill (H.R. 2788) to limit actions brought for violation of federal statutes to one year, where no other statute of limitations has been provided specifically. (TELEPHONY, October 6, page 16.)

This bill, which has been actively supported by the United States Independent Telephone Association, would apply to actions arising from claims based on alleged violations of the Fair Labor Standards (Wage-Hour) Act. The bill also would require that actions based on accrued back claims be commenced within six months and would, further, outlaw suits based on alleged violations arising from activities of employers exercised in good faith under reasonable interpretation of compliance with the federal statute.

The House was expected to pass the bill in view of the committee's recommendation and limitation of debate. Further action in the Senate is expected soon.

V V

United Utilities Buys Stock Of Bell Company

United Utilities, Inc., Abilene, Kan., on October 30 acquired the 25 per cent interest in the common stock of the United Telephone & Telegraph Co. owned by the Southwestern Bell Telephone Co., according to Alden Hart, president of United Utilities, Inc.

The purchase amounted to 6,178 shares, which gives United Utilities 100 per cent ownership in the United Telephone & Telegraph Co. The latter owns all the common stock of the American Telephone Co. of Kansas and the United Telephone Co. of Missouri.

V V

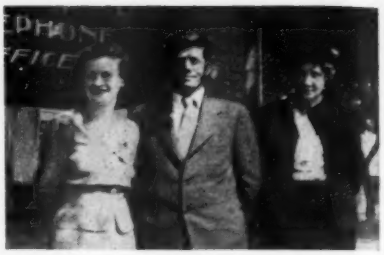
Fargo, N. D., Independent Buys Home Company

The Home Improvement Co., Crystal, N. D., which serves about 500 subscribers in the towns of St. Thomas, Henzel, Hoople and Glasston in the Red River Valley in Pembina County, was sold recently to the Dakota Automatic Telephone Co., Fargo, N. D.

The Home company was organized in 1905. Miss M. C. Mitchell, manager, has been with the company for more than 30 years. Wirechief Stapf joined that company in 1906 and Mae Weaver, who resigned recently, served as operator for more than 20 years.

The Home corporation is arranging to pay its stockholders 80 per cent of the face value of their stock.

The Dakota Automatic Telephone Co. expects to convert to dial service in the coming year, it was reported.



Long time employes of the Home company pictured above are (left to right): MAE WEAVER, operator; WIRECHIEF STAPF and MANAGER M. C. MITCHELL.

V V

Falls from Telephone Pole

R. E. FENSKE, owner of the Home Telephone Co., Richland Center, Wis., recently suffered two fractured vertebrae when, while repairing a telephone line, his safety belt broke and he fell backwards from a 20-ft. pole.

V V

Chief Operator Resigns

MILDRED GLADE recently resigned as chief operator at the Ocheyedan exchange of the Central Iowa Telephone Co.

V V

Peebles Now With IT&T

LEIGHTON H. PEEBLES, director of the communications division of the War Production Board until the termination of the division on September 30 now is associated with the International Telephone & Telegraph Co., New York City.

Answers to Traffic Questions On Page 44

(1) After the operator has left the order she should cut out promptly and answer any signal that might be waiting.

(2) The calling party should be held on the line and the supervisor should be notified immediately. The supervisor should take the ticket to the switchboard and see that the call is handled without delay.

(3) An AG request is a potential service complaint, either voiced or in the mind of the customer. These requests frequently indicate failure to give a report when due, or when requested, or when we have told the customer that we would call him in a specified time.

(4) Yes, during flurries and heavy filing of calls.

(5) By listening attentively while each detail of the call is being given.

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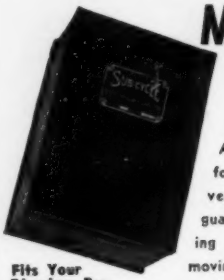

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J. N. Petrie Joins Staff Of Automatic Electric

Joseph N. Petrie, until recently system telephone and telegraph engineer for the Union Pacific Railroad, has accepted a position as staff engineer for Automatic Electric Sales Corp., Chicago, and will act in a technical advisory capacity to customers in connection with projects involving the use

J. N. PETRIE

of Lenkurt carrier telephone and telegraph equipment. The distribution of Lenkurt equipment to Independent telephone companies, railroads and pipe line companies recently was assumed by the domestic and export sales affiliates of the Automatic Electric group.

Mr. Petrie has become widely recognized, both in the railroad field and in the Bell System to whose interests he devoted the early part of his career, as an authority in the field of telephone and telegraph communication. Through long contact with these fields, he has become well-informed on technical matters relating to message transmission on long lines, and the engineering and construction of long distance plant facilities. In this work he has been an enthusiastic exponent of the value of modern carrier methods on wire communication circuits.

Mr. Petrie is a graduate of Denver (Colo.) University (E.E., '29), and his first position in the communications field was with the Mountain States Telephone & Telegraph Co. After serving in various plant capacities, he was appointed assistant state toll wire chief, in which position he had supervision over toll terminal apparatus, repeaters and other equipment relating to long line operation.

In 1935, Mr. Petrie was appointed plant engineering assistant for the Mountain States company, and for the following four years was engaged in various matters relating to plant design and engineering, including the techniques of carrier system application, the engineering of transposition patterns, loading practices and transmission design for both local and toll plant.

For the past 6½ years, Mr. Petrie has been system telephone and telegraph engineer for the railroad, with headquarters in Omaha, and has supervised the network of communication lines for the entire Union Pacific system. It has been largely through his efforts that the Union Pacific Railroad has achieved distinction for the high efficiency of its communications facilities, and has been conspicuous for its extensive use of carrier systems, it was reported.

V V

Three Sylvania Plants Win Third Star for "E" Flags

Three Massachusetts plants of Sylvania Electric Products, Inc., recently were awarded a third star for their Army-Navy "E" flags.

For production of lighting, radio and electronic equipment during the war, the company now has received a total of 19 Army-Navy "E" awards throughout its various plants in the East and Midwest. In addition, 22 Navy "E" awards out of a total of 81 awarded were received for participation in the Proximity Fuze project.

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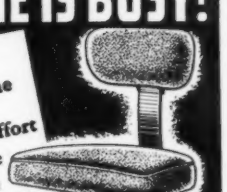

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A. B. Chance Produces All Steel Anchor

The A. B. Chance Co., Centralia, Mo., recently announced the manufacture of a new, all steel screw anchor, consisting of a drop forged, steel, tripleye rod, with double arc welded to a forged steel blade. The method by which the anchor is produced, it is claimed, makes it possible to control the pitch of blade or helix to the exact degree required for maximum holding power and minimum earth disturbance during installation.

A feature is the thimbleye on the high strength rod which admits a bar for screwing the anchor into the ground, thus eliminating the need for a wrench. It will admit one to three guy strands.

The anchor has been tested thoroughly and proved in use to hold several times its rate of strength, the company stated. It is made in four, six, eight, and 10-inch diameters and particularly is recommended for installation in sandy soils.

V V

Radar to Be Installed On Great Lakes Ships

The installation of radar in Great Lakes ships by next spring, is anticipated with the appointment on October 17 of the Lorain County Radio Corp., Lorain, Ohio, as Great Lakes distributor for the Electronic Navigator. This is a General Electric Co. instrument, specifically designed as an obstacle detector and navigational aid for cargo and passenger ships, tankers, ferries and similar classes of vessels. Lakes ships, it was stated, will be among the first in the Merchant Marine permitted to use radar.

The Lorain County company in 1934, pioneered the ship-to-shore radio-telephone on Great Lakes ships, which has proved invaluable both in safety to ships and in expediting lakes shipping generally. H. E. Hageman, president of the company, said it will provide full maintenance service over the entire lakes area.

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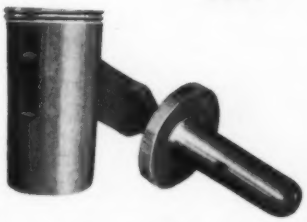

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Butler, Pa., Company Celebrates 50th Anniversary

The Peoples Telephone Corp., Butler, Pa., which was founded in 1895, celebrated its 50th anniversary with a dinner meeting November 7 in the Nixon Hotel, Butler.

All employes and officers of the Peoples company were invited to the meeting and Clyde S. Bailey, Washington, D. C., executive vice president of the United States Independent Telephone Association, gave the main address of the evening.

V V

FOR SALE

FOR SALE: Due to the consolidation of the Hanamo and the People's Telephone Cos. of Maryville, Mo., we have for sale one Kellogg switchboard; seven sections; three long distance, one universal, and three local positions, in good condition. We shall be glad to hear from anyone interested. Nodaway Telephone Co., Maryville, Mo.

FOR SALE: F.O.B. Chicago, 10,000 ft. of new No. 17 bronze twisted pair drop wire at $16.75 per 1,000 ft.; 5,000 ft. of new No. 14 Copperweld twisted pair drop wire at $23.50 per 1,000 ft. Write Box 2210, c/o TELEPHONY.

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